



MEETING SUMMARY

Meeting: Safety Subcommittee
Location: Virtual Meeting - Zoom
Date: July 23, 2020

Attendees:

Name	Organization
Wade Alonzo	Washington Transportation Safety Commission (WTSC)
Ted Bailey	Washington State Department of Transportation (WSDOT)
Logan Bahr	Association of Washington Cities
Shelly Baldwin	WTSC
Joel Barnett	Federal Highway Administration
Debi Besser	WTSC
Kenton Brine	NW Insurance Council
Barb Chamberlain	WSDOT
Brian Chandler	DKS Associates
Holly Cocci	Gorgon Thomas Honeywell Governmental Affairs
Lt. Tim Coley	Washington State Patrol
Dan Cooke	Washington Department of Licensing
Doug Dahl	TransitLab Consulting – TARGET ZERO
Mandie Dell	WTSC
Katharine Flug	Washington Department of Health
Captain Tom Foster	Washington State Patrol
George Ivanov	Waymo
Jeffrey James	Federal Motor Carrier Safety Administration
Tamara Jones	Washington State Transportation Commission
Francois Larrivee	Hopelink
Mi Ae Lipe	Driving in the Real World
Steve Marshall	City of Bellevue
Kimberly Mathis	Washington State Patrol
John Milton	WSDOT
Markell Moffett	WSP USA
Manuela Papadopol	Designated Driver
Ryan Spiller	Capitol Connection
Warren Stanley	WSDOT
Derek Viita	Strategy Analytics, In-Vehicle UX service
Shannon Walker	City of Seattle
Yinhai Wang	University of Washington, PacTrans
Alan Werner	Washington Society of Professional Engineers



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Name	Organization
Bryce Yadon	Futurewise
Kevin Zeller	Washington State Patrol

WELCOME AND INTRODUCTIONS

Captain Tom Foster

- Revised meeting schedule – Moved to shorter monthly meetings
- Introduction of new co-chair – Manuela Papadopol
- Review agenda

Topic closed.

Feedback for AV Work Group on HB2470 Language with Focus on Safety Implications

Captain Tom Foster

- Looking to gather feedback from attendees on HB2470 language, specifically sections that have safety implications
- Drafting a feedback document to submit to the Executive Committee as a subcommittee
- **ACTION ITEM:** Any attendees that would like to provide feedback beyond what is discussed today, please email the additional feedback to Debi Besser no later than August 17th
- Section 16 subsection 1 “An automated driving provider shall take reasonable steps to comply with chapter 46.61 RCW during automated operation of an associated automated vehicle.”
 - “...take reasonable steps...” causes concern – one either complies or does not.
 - Suggest replacing “...shall take reasonable steps to comply...” with “...shall comply...”
 - Discussion:
 - Law should not have grey lines
 - If we are looking to provide recommendations for a new standard, need to provide clarity
 - Waymo was involved in ULC Model AV bill drafting sessions – Comments and intent from those discussions:
 - This language is consistent with what other states have implemented
 - California has an exception for compliance if the AV is taking actions to improve road safety which may violate existing traffic laws
 - Intended for scenarios intended to violate traffic laws
 - Example: Crossing a double yellow line to move around a stalled vehicle, an accident, construction, etc.
 - Example: If a police officer is manually directing traffic

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- Many scenarios that are common practice, but not covered under existing law, to maintain the flow of traffic and ensure the safety of road users
 - Is there a better way to capture the ULC intent in this language, defining “reasonable steps” more clearly?
 - Open question to subcommittee to consider through this discussion - Should we pose these questions in the feedback document to be considered by lawmakers? Or pose the question *and* provide recommendations for suggested language changes?
 - Suggestion for both – In some areas, subcommittee can just provide feedback for consideration, in other areas specific language changes should be recommended
 - How are those types of scenarios (violating traffic laws to ensure road user safety) dealt with currently, with human driven vehicles? Could we leverage that here?
 - For law enforcement now, if there is a stalled vehicle, we wouldn’t bat an eye if traffic drives on the shoulder to keep traffic flowing. However, if a vehicle drives on the shoulder to take a freeway exit, that is not considered appropriate.
 - Every situation is dealt with differently. Not sure how to capture that here.
 - Maybe keeping the “reasonable steps” language is acceptable here, and we just know that law enforcement will need to deal with each situation differently
 - A statutory example of this type of language is RCW 46.61.425 – A driver is allowed to exceed the limit “within reason” if passing a slow vehicle on a two-lane road
 - It is left up to the officer observing the action to determine when it may be considered a violation
 - There are still enforcement mechanisms in place – commissioned officers enforcing the law, automated enforcement at red lights and in school zones
 - This is more of a discretionary tactic
 - Do we need specific language differentiating what a vehicle driven by a human vs. automated can do? Does that need to be delineated?
 - Why would we change how we enforce laws because they are an automated vehicle?
 - Currently, the officer enforcing the law determines if something is ‘reasonable’, and drivers can contest in court, explaining why they think their actions were ‘reasonable’
 - We don’t want to create two sets of rules – one for human drivers and one for AVs – especially from a safety context, all road users should be the same.
 - Suggestion to say “shall comply” – AVs should be held to existing standards or better.
 - The world of AVs is different than the world we know now. Can we provide examples or definitions to provide more context on the language? Examples of reasonableness is different scenarios?
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- Examples are not typically included in statute – It opens up a rabbit hole of “the statute did not include example X, so does that mean it does not apply?”
 - Example-type materials would go into law enforcement training
 - Legislative history and intent can also be pulled into a court decision – committee meeting discussions, floor speeches, etc.
- Whose ‘reason’ are we judging? Software programmers? A tester observing an automated vehicle being tested on roadways?
 - It is cleaner to just say “shall comply”
- Need to remember there is also rulemaking – beyond laws and statute, rules can be developed for further clarification and detail
- From a Safety Subcommittee standpoint, the safety response is to ensure statute is as clear as possible. Judgements can be mad at the roadside and final judgements later in court.
 - As a subcommittee, suggestion to recommend adoption of clear language – “shall comply”
 - We can include in our feedback and recommendation the discussion points we considered, and acknowledge the ambiguity when on the road
- Section 16 subsection 2 “An automated driving provider is responsible for a violation of chapter 46.61 RCW during automated operation of an associated automated vehicle.”
 - Concern over how we hold the automated driving provider (ADP) responsible.
 - If an AV violates 46.61, who does law enforcement give the ticket to? Who do they contact? Is that the vehicle occupant’s responsibility?
 - Discussion:
 - Note that this language is also consistent with what other states have implemented to date
 - In California and Arizona, AV companies have to provide procedures for law enforcement and emergency services for interacting with an AV
 - How to pull an AV over
 - Sounds, sirens, visual profiles of police and emergency vehicles built into the AVs
 - Contact information for police/emergency
 - Citations are issued to the AV company
 - If a carsharing company is operating an AV, the autonomy system fails, a teleoperator they work with takes over remote control of the vehicle, then a violation occurs – who would be responsible for the violation?
 - If remote operation, not just remote assistance, then remote driver would be required to meet all laws in-vehicle drivers must meet – licensing, violations, etc.
 - Still looking at Level 3 automation and below – very complex to determine who is operating vehicle at a given time
 - In vehicle

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- Remote
- System itself
- Otherwise Level 4 or 5, where all driving tasks are controlled by automation
 - Level 4 and 5 there is a clear responsibility on the AV entity
 - Level 4, some scenarios where an operator could take over driving of the vehicle though
- Need to include rulemaking authority into the language – There are to be some Washington Administration Codes that go along with this
 - Would the ability to contact the ADP be contained in rule or does it need to be written into statute?
 - Would contact information be posted on the vehicle? Provided electronically?
 - Language is consistent between states, but the mechanism varies
 - California as written in regulations, based on statute
 - Arizona Department of Public Safety issued regulations following administrative action at the Governor’s level
 - Other states require it by law
- Do other states require law enforcement plans for AV companies?
 - California and Arizona both have criteria companies need to meet
 - **ACTION ITEM: George Ivanov with Waymo will send CA and AZ criteria and Waymo law enforcement engagement plan to Debi Besser, who will disseminate to subcommittee members**
- What are implications here if, for example, connectivity is lost leading to an infraction how are we defining “the system”? does the cell service provider share liability? The modem manufacturer?
 - Whether the vehicle is operated remotely, by an operator, or in automated mode, if there is an infraction, who is included in the liability?
 - For teleoperations, there are varying levels
 - Remote assistance – AV keeps control of the driving task, so the ADP would be responsible
 - Remote operation – If remote driver takes over, teleoperator or provider of that service would be responsible
 - Connectivity – Very relevant when looking at remote operation/driving
 - Note that this bill does not include remote driving, platooning, etc. – things not related specifically to driving/operating the vehicle were excluded
 - Level 4 and 5 AVs are still capable of complying with traffic laws and handling the driving task even with no connectivity
 - Note this bill only applies to Levels 4 and 5

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- A level 4 vehicle could potentially have someone in the driver's seat who could take over. If an infraction occurs, and that person says "no it wasn't me, it was the car" how would law enforcement know?
 - There can be dual-use vehicles – geofenced area scoped for level 4 automated operation, then when it reaches the end of the geofence, it notifies the driver they need to take over and manually drive from there
 - Expectation that the responsibility in geofenced area is on the ADP, the responsibility in non-geofenced area is on manual driver
 - Automated vehicles may need to be manually operated if in an accident and stopped in place, obstructing traffic
 - Likely the ADP will deploy a team to resolve, but if law enforcement arrives first, there should be capabilities for either law enforcement to manually operate the vehicle out of the way or for remote control of the vehicle to move it
 - Only applicable when the self-driving system is completely disabled
 - Self-driving system should not stop mid-motion, as happens with driver assistive systems now
 - Law enforcement used to that scenario now, moving vehicles out of the way to clear for safety
 - What about vehicles with no steering wheel, gas pedal, brakes, etc.?
 - Law enforcement should be able to press a button in the vehicle to signal a teleoperator to move the vehicle
 - Note that full speed vehicles are years away from federal standards that allow removal of in-vehicle controls – applicable only to low speed vehicles for now
 - Another solution being looked at are other types of controllers, such as joysticks or gaming controllers
 - Good solution when there is no connectivity for remote control
 - In California, AV companies are required to communicate to law enforcement how to operate AV if needed
 - The "how" may differ between companies, but each company is required to disclose
 - Bill was not written with personally-owned AVs in mind; Written for ridehailing, delivery, heavy duty use cases
 - Assume that anyone taking part in the driving task is associated with the ADP
 - Expectation that passenger would not be expected to have to drive the vehicle, or would even be allowed to take over the vehicle

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- Vision for AVs is to allow freedom for people with disabilities, blind, etc. Don't want to get to point where someone in the AV has to take over. Would defeat the main benefit of having these vehicles.
 - Another example is a drunk rider – should not even have the ability to take over the driving task if they wanted to
 - Suggestion: When an officer approaches an AV in violation, there should be an external indication of the mode of operation - fully automated, remote operation, or manual – which will guide the actions to be taken.
 - Suggest adding something in rule to advise law enforcement whether a vehicle is in automated mode or not
 - Section 16 subsection 3 “A violation of this subsection is a violation under this title. A person may not operate an automated vehicle on a public roadway if the vehicle is not: (a) Properly maintained; (b) Lawfully insured; (c) Compliant with registration requirements; or (d) Fit to be operated.”
 - Concern about “properly maintained” and “fit to be operated” language – Who gets to decide?
 - Discussion:
 - Should be “in accordance with rules established by X agency (e.g. DOL, DOT, WSP)
 - Bill currently does not give rulemaking authority to develop and adopt rules to further clarify and provide definitions for these two items
 - Note that lately the Legislature is only allowing agencies to do this when specifically given rulemaking authority in law
 - Recommendation to add rulemaking authority for responsible agency to language
 - Are “properly maintained” or “fit to be operated” already defined somewhere in existing statute?
 - There are rules governed by WSP on vehicle equipment
 - Examples: Bumper must be X inches off the ground, windshields must be made of X grade glass, etc.
 - Most adopted from SAE standards
 - Part of the ULC drafting committee’s intent was for subject vehicles to be compliant with existing equipment requirements at the state level, not just for personally-owned vehicles, but also for ridehailing, hazardous goods transport, etc.
 - Intentionally did not include language specific to those – Expectation to comply with existing laws, no need to duplicate here
 - “Properly maintained” language intended to also refer to manufacturers criteria for vehicles
 - Manufacturers have user manuals with specific maintenance criteria for proper maintenance, such as temperature thresholds or having clean lights
 - Section 17 – Amends RCW 46.20.025 for persons allowed to operate a vehicle on WA roadways without a valid WA driver’s license, adds “a person taking a completely automated trip” and “An automated driving provider driving or operating an automated vehicle under automated operation.”
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- Concern over having a non-licensed driver operating an AV, but conversation today thus far has reduced those concerns
- Discussion:
 - Need a way to determine at trip start whether the trip was intended to be a completely automated trip – maybe through the law enforcement engagement plan. Transparency is key.
 - This is about operating an AV – If a person is taking a completely automated trip, they are not operating the vehicle, they are a passenger
 - Under current law, there is no requirement that a passenger in a vehicle must have a valid WA driver's license
 - Don't need to write into law that a child can take a ride in their parent's car
 - Suggest removing “(3) A person taking a completely automated trip”
- Section 23 amends distracted driving laws, adds that it does not apply to the automated operation of an automated vehicle
 - Initial concern was related to videos that have come out showing AV test vehicle operators asleep at the wheel
 - Other discussions today have helped resolve potential concerns on this – delineations of who is considered the “operator” of a vehicle when in automated mode
 - Discussion:
 - A person cannot operate a vehicle in automated operation mode, they are passengers
 - Intent and perspective of the bill drafter is key here
 - Shouldn't need a rule about the distraction of a passenger
 - It is possible that there is some concern based on current expectations
 - A person sitting in what is now considered the driver's seat is expected to be driving
 - If an officer sees a person sitting in the driver's seat, reading a book, immediate assumption is they are a distracted driver
 - Suggest posing the question back to the bill drafters – Is there language that can more clearly describe the intent of this section?
 - Shouldn't existing regulations for distracted driving and cell phone usage cover this?
 - Assume so as this does not seem to be talking about a driver, but rather a passenger riding in a Level 4 or 5 automated vehicle
 - It is possible a lot of this confusion and overlap will go away in the future when there is no physical operator in the vehicle
 - **ACTION ITEM: All Attendees - Please provide any additional feedback by August 17th once this draft feedback document is sent out.**

Topic closed.

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What is the Definition of “Autonomous”? Do we need to define “Driver”?

Captain Tom Foster

In [Executive Order 17-02](#) and [HB2676](#):

What is the definition of "Autonomous"? Do we need to define "Driver"?

- How do [SAE standards](#) apply?
 - What should be done?
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- Thinking we should use SAE definitions – Looking for feedback from subcommittee members
 - Executive Order 17-02 and HB2676 use the term “autonomous” – What SAE autonomy level equates to that?
 - Discussions in subcommittee meetings have stated that this language refers to levels 4 and 5 only – but if it were ever challenged in a court of law, is reference to something someone said in a meeting enough?
 - Discussion:
 - Some states take issue with referencing SAE standards...they are long, complex, and subject to change
 - Language in Executive Order was pulled from SAE standards language
 - “dedicated” language is how SAE defines levels 4 and up
 - Terminology isn’t an exact comparison, but if compared side by side there would be a lot of commonalities
 - HB2470 uses “automated”, whereas HB2676 uses “autonomous”
 - Suggest standardization between these terms
 - Note that SAE uses “automated”
 - Not something this subcommittee specifically should take on, suggest this subcommittee recommend the narrowing of definitions and put back on to the broader WA AV Work Group to resolve
 - One of the benefits to using SAE definitions is to keep it national
 - When auto manufacturers are building level 4 and 5 AVs, don’t want to be working off 50 different sets of rules and definitions
 - Keep national where possible, can add WA-specific things when needed to ensure safety of road users in WA
 - Is SAE the right place to pull definitions from? Or should it be NHTSA?
 - SAE is the accepted national practice, but NHTSA is the federal agency overarching for every state
 - NHTSA incorporates SAE automation levels by reference in AV Guidance 1.0, 2.0, and 3.0
 - One challenge is that SAE revisions have outpaced NHTSA a bit, although the high level of the definitions have not changed
 - ISO incorporating SAE automation levels definitions



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- UN has levels of automation that mirror SAE
- Recommend finding consistent definitions and applying across language in WA

Topic closed.

Update on WTSC AV Projects

- Previously talked about WTSC AV data project
 - Formed a stakeholder project group, discussed what data is out there, what could be gathered, how it could be used
 - Ultimately determine it is too early in the game – There needs to be a federal standard
 - Would not make sense to continue, do not want to spend money gathering ideas and a path forward until there is more information from the federal level
- Planned project for next year, approved at the agency level, pending NHTSA level approval - Educate people on ADAS systems
 - Safety features
 - Benefits
 - Limitations
 - Focusing mostly on Levels 1 and 2 automation
 - There are many misunderstandings on these systems – drivers thinking they can turn on the ADAS and not pay attention to the road
 - WTSC plans to move forward on this in October 2020

Topic Closed.

MEETING ADJOURNED.
