



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

**Advisory Council on Connected and Autonomous Vehicles Meeting
(Executive Order 14)**

Thursday, April 19, 2018

11:00am – 12:30pm

DelDOT Administration Building, 800 Bay Road, Dover, DE
Farmington/Felton Conference Room

MINUTES

1. Welcome and Introductions

- a. The meeting commenced at 11:05 AM. Secretary Cohan introduced herself and directed Advisory Council members and attendees to introduce themselves.

Present Voting Council Members

Barzilai Axelrod	Attorney General's Office
Patty Cannon	Division of Small Business, Development and Tourism (DOS)
Jennifer Cohan	Delaware Department of Transportation (DelDOT)
Milton Lee Derrickson	Delaware Motor Transport Association (DMTA)
Renee Gibson	Alliance of Automobile Manufacturers
Leslie Ledogar	Department of Insurance (DOI)
Jerome Lewis	University of Delaware (UD) Institute of Public Administration
Reed Macmillan	Dover/Kent Metropolitan Planning Organization
Terry Megee	DE Automobile and Truck Dealers Association
Rep. Ed Osienski	State Representatives
William Pfaff	Sussex County
Shari Shapiro	Uber
Elayne Starkey	Delaware Department of Technology and Information (DTI)
Patrick Wenk	Delaware State Police (DSP)

Members Present by Proxy

Jim Lardear	AAA Mid-Atlantic (Proxy for Cathy Rossi)
Tigist Zegeye	WILMAPCO (Proxy for John Sisson)

Absent Council Members

Rep. Ruth Briggs King	State Representatives
Sen. Stephanie Hansen	State Senate



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

Sen. Brian Pettyjohn State Senate
Scott Vien DMV

Also Present

Christie Bonniwell	DelDOT
Steven Chillas	Delaware OMB – Contracting
Aleine Cohen	DOJ
Erin Coombs	Jacobs
Gene Donaldson	DelDOT
Jen Duval	Jacobs
Ken Feaster	DOJ/DelDOT
Lisa Goodman	Hamilton Goodman Partners, LLC
Ken Grant	AAA Mid-Atlantic
Dawn Hopkins	Economic Development
Chris Kelly	UD IPA
Pat Kennedy	FHWA
Anne Marie Lewis	Alliance of Automobile Manufacturers
Lizzie Lewis	Hamilton Goodman Partners, LLC
Li Wen Lin	DelDOT—Technology and Innovation
Mark Luszc	DelDOT
Nicole Majeski	DelDOT
Rob McCleary	DelDOT
Colton Phillips	DelDOT
Megan Rosica	Jacobs
Peggy Shultz	League of Women’s Voters
Mark Thompson	WhyFly
Jason Walsh	Price Auto Group
James Wilson	BikeDE
Joe Zilcosky	DOS

2. Approval of the Previous Meeting Minutes

- a. There was a correction to the 3/15 meeting minutes—section 4.b from the Insurance Commissioner’s office:

We agreed on a draft mission statement for the Insurance subcommittee which is: “The mission of the Insurance Subcommittee of the Advisory Council on Connected and Autonomous Vehicles is to identify ways for the Department to ensure that, as insurance



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

products evolve in response to the invention and deployment of connected and autonomous vehicles, those products provide consumers with appropriate and adequate insurance coverage.”

- b. P. Cannon made a motion to accept the updated meeting minutes from the previous meeting held on March 15, 2018. B. Axelrod seconded the motion and motion passed and minutes were approved.

3. Updates on Subcommittees

- a. Promoting Economic Development
 - i. P. Cannon reported that there was no quorum for 4/19 meeting. During the allotted meeting time, there was a review of the ITMS Strategic Plan handout (drafts provided to committee).
 - ii. L. Derrickson provided an update on the Commercial Trucking industry and the upcoming state Truck Driving Championship for CDL drivers.
- b. Technology, Security, and Privacy
 - i. E. Starkey provided committee update. The fifth meeting was held on 4/19.
 - ii. Productive discussion focusing on privacy and insurance.
 - iii. Subcommittee has split into three groups, each working through the template provided to the committee. The working groups spent time looking at privacy issues from different angles—driver, passenger, and manufacturer. The goal is to identify the broad issues, pitfalls, and concerns.
 - iv. Sec. Cohan reinforced that the goals for the subcommittees and council is not to solve all issues but to identify the issues and steer the direction moving forward.
- c. Transportation Network Infrastructure
 - i. R. McCleary provided subcommittee update. There was no quorum for the committee’s third meeting on 4/5.
 - ii. The committee hosted a Q&A session with TARDEC gaining more information about their Leader/Follower technology for trucks and fleet vehicles. TARDEC provided more information on roadside infrastructure and DSRC technology deployment.
 - iii. 3M provided the subcommittee with a presentation on pavement markings and visibility enhancements.
 - 1. Sec. Cohan asked R. McCleary if 3M provided insight on any new developments. R. McCleary explained that they discussed magnetic tape being reintroduced for vehicles to identify in snow conditions and the introduction of signage with invisible QR codes tied to a database that can be read by an on-board camera.
 - iv. The next committee meeting is scheduled for 5/8/18
- d. Impacts on Public and Highway Safety



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

- i. M. Luszczyk provided the committee report for G. Dixon. Last meeting was held on 4/13 and the next meeting is scheduled for 5/11.
 - ii. The subcommittee is working to organize the matrix for safety related issues at each level of automation. K. Grant has shared the matrix at the national level of AAA and the subcommittee is in alignment with what they are also researching.
 - iii. The first draft of the subcommittee report will be sent out to the members in the coming week.
 - iv. Key topics that the subcommittee is discussing:
 - 1. Licensed driver in vehicle
 - 2. Level of automation listed on vehicle for inspection
 - 3. Testing on DE roadways
- 4. Update from Delaware Department of Insurance
 - a. L. Ledogar provided update on recent attendance to the National Association of Insurance Commissioner's (NAIC) quarterly meeting in Wisconsin.
 - i. NAIC establishes Model Acts for states to use for reference on legislation.
 - ii. NAIC has a committee dedicated to the insurance related issues of autonomous vehicles.
 - iii. There is an Innovation and Technology Task Force and Cyber Security Working Group
 - 1. Discuss regulatory issues for AV and the state regulatory framework
 - 2. Released model rule, Insurance Data Security Model Law in October 2017, that was adopted during National Cyber Security Awareness Month. This model law requires companies to notify the public in the event of a data breach. Delaware is looking at this model and will consider the implications.
 - iv. Big Data Working Group
 - 1. Reviewing regulatory framework and making modifications to model laws as they relate to data needs.
 - b. Delaware Insurance Commissioner's Office is looking at what the NAIC is doing and basing the state direction on their efforts.
 - c. Sec. Cohan inquired about the insurance implications of current DE Code not explicitly requiring a driver in the vehicle.
 - i. L. Ledogar did not have a definite answer.
 - d. L. Ledogar is currently investigating data collection devices that plug into the vehicle allowing for the insurance company to collect data on personal driving habits. This data is useful in determining insurance rates and driving trends.
- 5. **Presentation by Alliance of Automobile Manufacturers**



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

- a. “Automated Driving Systems (ADS) Equipped Vehicles” presented by Anne Marie Lewis, Ph.D.
 - i. Automated Driving Systems (ADS)
 - 1. ADS is a natural evolution—anti-lock brakes to lane keeping assistance
 - 2. ADS utilizes machine learning
 - ii. SAE Levels of Automation
 - 1. Levels 3-5 “Highly Automated”
 - a. Conditional Level 3
 - b. High Level 4
 - c. Full Level 5
 - 2. Personal vehicles at Level 3
 - iii. ADS-equipped vehicles—must meet FMCSA safety standards
 - 1. GM Cruise AV
 - a. No steering wheel/no pedals
 - b. Posted safety self-assessment outline 12 safety areas that are required by manufacturers
 - i. System safety
 - ii. Operational design domain
 - iii. Object and event detection and response
 - iv. Fallback (minimal risk condition)
 - v. Validation methods
 - vi. Human machine interface
 - vii. Vehicle cybersecurity
 - viii. Crashworthiness
 - ix. Post-crash behavior
 - x. Data recording
 - xi. Consumer education and training
 - xii. Federal, state, and local laws
 - 2. Smart Vision EQ 2030
 - a. Concept vehicle
 - b. V2X communications
 - 3. Toyota e-Palette Concept Vehicle
 - a. Electric vehicle
 - b. Designed in modular fashion—partnered with Amazon
 - i. No seating requirements
 - ii. Can be retrofitted for any concept/use
 - iv. When does this happen



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. Box 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

1. First Level 3 should be available for purchase in 2018 for stop and go highway traffic only (37 mph or less)
 2. 2020 available
 3. 2030 common
 4. 2035 standard
 5. 2045 majority
 6. 2055 ubiquitous (full fleet conversion)
- v. Four dynamics influencing the modern auto industry
1. 4 trends happening in parallel
 - a. Automation
 - i. Innovation in traditional manufacturing companies, start-ups, mergers
 - b. Connectivity
 - i. Enhance safety capabilities of Automated vehicles.
Benefits of 5G/DSRC
 - ii. Signal phase and timing (SPaT), reducing congestion
 - c. Ridesharing
 - i. First applications of advanced automated vehicles will be geo-fenced areas
 - d. Electrification
 - i. Concepts that have been announced are in electric or hybrid electric platforms—not a requirement but the trend is simultaneous to be more sustainable
 2. Trends are not reliant on each other
- vi. Infrastructure considerations
1. Comments submitted to FHWA Docket No FHWA 2017-0049
 2. AV needs benefit non-AVs and cost effective for safety benefit
 3. Consistency with MUTCD
 - a. Lane markings top priority
 - b. Traffic signals and signs –consistency
 - c. Construction zones
 4. Digital infrastructure
 - a. Can provide benefits of communication, sharing information, notifications to drivers’/emergency vehicles, V2I, SPaT
- vii. Update on Federal Activity regarding ADS-equipped vehicles
1. NHTSA request for Comments on potential FMVSS barriers for ADS equipped vehicles
 2. NHTSA public meeting (3/6/18)



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

3. NHTSA stakeholder meeting (4/3-4/4/18)
 4. FHWA request for comments on potential FMVSS barriers for ADS-equipped vehicles (3/5/18)
 5. FTA request for comments (3/2/18)
 6. FHWA meetings between ADS industry
 7. Stakeholders and infrastructure owners and operators (TBD)
 - viii. Non-traditional seating configurations require additional efforts
 - ix. Alliance has reviewed and provided input on 30 FMVSS
 1. It is important to keep in mind that any potential new FMVSS for ADS or non-ADS equipped vehicles
 - x. Event Data Recorder SAE J1698 (black box) is being updated to account for parameters uniquely related to ADS
 - xi. Auto Alliance Model Bill created based on SAE J3016. Technology neutral and all-inclusive as technologies are being developed
 1. Insurance
 2. Ride-sharing networks
 3. Reporting
 - xii. Instead of having a permitting process—utilize NHTSA
- b. Questions
- i. J. Lardear—curious about Level 3 automation and the distraction of the driver / emergency situations
 1. A. Lewis—some manufacturers are looking at Level 3 technology. Important to stress response/reactions/focus on driving. GM Super Cruise has camera that monitors driver eye movement. There will be redundancies and further research over time.
 - ii. L. Derrickson—do you envision training for drivers before operating Level 3? In Europe they require about 20 hours of training.
 1. A. Lewis—not 100% sure of any plans but it is reasonable to expect some level of training. Consumer must be educated on what vehicle can/cannot do
 - iii. R. McCleary—can we get a copy of model legislation? Do you have recommendations for roadside signage?
 1. A. Lewis—clean signage and consistency. Outlined further in comments to NHTSA report. No hard recommendations on DSRC/5G requirements.
 - iv. L. Ledogar—what are your thoughts on data recorder?
 1. A. Lewis—the current “black box” standards are being updated.
 - v. L. Ledogar—what happens to the data of used cars?



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

1. A. Lewis—data is recorded when there is a trigger threshold met (indicative of a crash). No personal data is stored and data is recorded in the process of crash reconstruction.
- vi. B. Axelrod—there was a discussion about training drivers at various levels of automation. Do you envision auto manufacturers embedding training in vehicles so that the end-user is forced to learn?
 1. A. Lewis—unaware of any manufacturers working on this.
- vii. B. Axelrod—how does the Auto Alliance envision having a measure of how many automated vehicles are on the roadway?
 1. A. Lewis—it is understood that that type of information would be tracked through the Department of Motor Vehicles.
- viii. S. Chillas—what are the recommendations to the state to teach levels of autonomy in the school curriculum?
 1. A. Lewis—state level education not discussed at Auto Alliance and would be up to the individual school districts or states.
- ix. E. Osienski—are manufacturers looking at standardizing dashboard symbols?
 1. A. Lewis—currently manufacturers are engaged in conversations on this but the competitive market has not always been receptive to the standardizing of features and symbols.
- x. M. Luszc—what is the timeline for introduction?
 1. A. Lewis—Level 3 vehicles will be on the roadways likely by the end of 2018. Manufacturers have announced plans to release Level 4 by 2020. Level 5 is still unknown.

6. Public Comment

- a. P. Shultz on behalf of the League of Women's Voters requested that the council research land use implications of CAVs and sustainable energy.
 - i. Land use—with the increase of vehicles what are the potential implications on the land and development. Is it possible to add someone to the council from the planning field to address land use?
 1. Sec. Cohan informed that WILMAPCO is on the council.
 - ii. Sustainable Energy—what are the potential impacts of expending carbon dioxide emissions?

7. Adjourn

- a. Sec. Cohan informed council and attendees that there will be no May meeting and the next meeting is scheduled for June 21st.



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

- b. P. Cannon made the motion to adjourn the meeting and was seconded by B. Axelrod. The motion passed and meeting adjourned at 12:20 PM.