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TECHNICAL MEMORANDUM

TxDOT IAC – Technical Support to the CAV Task Force

DATE: February 9, 2022

TO: Zeke Reyna, TxDOT
Strategic Research Analyst, CAV

COPY TO: TTI_Reports@tti.tamu.edu
Tim Hein, Research Development Office, TTI
Ed Seymour, Executive Associate Agency Director, TTI
Robert Brydia, Senior Research Scientist, TTI

FROM: Beverly Kuhn Research Supervisor
Senior Research Engineer, Texas A&M Transportation Institute

RE: Licensing and Registration Subcommittee
January 31, 2022 Meeting Notes

Attendees:

Alison Pascale	Audi
Allan Rutter	Texas A&M Transportation Institute
Beverly Kuhn	Texas A&M Transportation Institute
Brittney Gick	Texas A&M Transportation Institute
Darren Anderson	Texas Department of Transportation
Ed Seymour	Texas A&M Transportation Institute
Marcelle Jones	Stantec
Robert Brydia	Texas A&M Transportation Institute
Servando Esparza	TechNet
Shelly Mellott	Texas Department of Motor Vehicles
Sly Majid	Argo AI
Zeke Renya	Texas Department of Transportation

I. Opening Comments – Zeke Reyna, TxDOT

- Welcome and thank you for attending this first meeting of the year for the Licensing subcommittee. We appreciate everyone taking the time to attend and participate
- Review of members and attendee list in lieu of roll call.
- Question for the Chair: Do we want to proceed with planned meeting or reschedule due to low attendance?

II. Chair Welcoming Statement – Shelly Mellott, Texas Department of Motor Vehicles

- Welcome and thank you for attending
- Let's proceed with the meeting as planned rather than reschedule and hope that more join the meeting as we begin.

III. Mural Board Discussion – TTI Team

- Focus for Today
 - Goal: Determine what information people need to get into ADAS or ADS equipped vehicles and drive safely?
 - Comment: Does this need clarification if commercial trucks are included?
 - Audience: User of ADAS Features on Vehicles (Owned / Rented / Fleet)
 - Deliverable: White paper forming the basis for a targeted communications plan
- Issues
 1. Terminology names differ by manufacturers, agencies, research organizations, and other automated vehicle stakeholders
 2. Level of capability under the same name may differ as well
 3. Misleading names can influence drivers to think that features are capable of performing in ways they are not.
- Terminology

Acronym	Automated Technology Feature	Description
ACC	Adaptive Cruise Control	Uses lasers, radar, cameras, or a combination of these systems to keep a constant distance between the ACC-fitted car and the car ahead, automatically maintaining a safe following distance. If highway traffic slows, some systems will bring the car to a complete stop and automatically come back to speed when traffic gets going again, allowing the driver to do little more than pay attention and steer.
AEB	Automatic Emergency Braking	Automatically applies brakes to prevent a collision or reduce collision speed when the system detects an imminent collision with a vehicle directly in front. AEB comes in two forms: city automatic emergency braking (CAEB) and high-speed automatic emergency braking (HAEB).
BSW	Blind Spot Warning	Provides visual and/or audible notification of a vehicle in the blind spot. The system may provide an additional warning if the driver uses the turn

		signal when a car is in another lane next to the BSW-fitted car.
FCW	Forward Collision Warning	Provides visual and/or audible warning intended to alert the driver and prevent a collision.
LDW	Lane Departure Warning	Provides visual, audible, or haptic warning to alert the driver when his or her vehicle crosses lane markings.
LKA	Lane Keeping Assist	Provides automatic corrective steering input or braking when crossing lane markings.

- Interview Status

Type	Stakeholder	Interviewee	Interview Date
Association	Texas Automobile Dealers Association	Rob Braziel	January 21, 2022
	Automotive Service Association of Texas (ASA-Texas)	Robert Redding, Madaline Hawkins	January 4, 2022
	Texas Trucking Association	John Esparza, Dana Moore	December 13, 2021
Private Company	May Mobility	Fawna Tucker	January 26, 2022
	Kodiak Robotics	Daniel Goff	December 20, 2021
Government	Texas Department of Licensing and Regulation	Michael Strawn, Brian Beall	January 6, 2022
	City of Arlington, Texas	Ann Foss	December 20, 2021

- Interview Questions

1. How does the technology work with the driver?
2. What are the gaps in the technology?
3. Is an educational component offered for users to understand vehicle features and services?
4. How might different ownership models affect driver use of automated vehicles—rental, mobility as a service (MAAS), subscription models?
5. Is anything being done to address licensing and registration that needs to be identified?
6. Do users understand the technology on the vehicles? How is this measured or assessed?
7. Are there any feature-based educational tools or strategies available (i.e., how do dealers educate car owners on features)?
8. How are vehicles and associated technologies monitored and maintained?
9. What policies exist for when there is an accident or emergency? What are unique or special circumstances of the vehicle’s technologies that can pose issues for occupants or first responders?
 - Who will participate?

- We have obtained good information from the interviewees but could always use more.
 - Shelly has contacts at Tesla if the team would like to meet with them.
 - Will share with our TechNet members to see who is interested in taking part
 - Ford
 - GM
 - Volvo
- Literature Review
 - Goal: Understanding what information needs to be shared with automated and connected vehicle users. Important questions are:
 - Some findings:
 - Recent surveys have shown that there is a fear and lack of trust among the public regarding automated vehicle technology
 - Drivers are more likely to attempt to test the automated features in risky situations, by purposefully trying to make the technology interact in unintended ways
 - Concern over automated vehicles learning how to interact with their environments and adapt to different situations in which they are placed.
 - The general confusion about the functionality of automated technology and features and, in some cases, the deliberate misuse of the technology, are cause for concern
 - **Summary of AAA Vehicle Technology Annual Survey Results.**

Survey period	January 2016	January 2017	December 2017	April 2018	January 2019
Respondents	1,832	1,012	1,004	1,014	1,008
% of respondents afraid to ride in fully automated vehicle	75%	78%	63%	73%	71%
% of women afraid of fully automated vehicle	81%	85%	73%	83%	N/A
% of men afraid of fully automated vehicle	67%	69%	52%	63%	N/A
% of respondents who want at least one automated technology feature on their next vehicle	61%	59%	51%	55%	N/A

- Training and Education Materials
 - What training and education material is available (especially from the private consumer side)
 - Comments:
 - link to terminology: <https://advocacy.consumerreports.org/wp-content/uploads/2019/11/CR-ADAS-Common-Naming-One-pager.pdf>

- AAMVA has established an Autonomous Vehicle Information Sharing Group to gather, organize and share information with the AAMVA community related to the development, design, testing, use and regulation of autonomous vehicles and other emerging vehicles <https://www.aamva.org/Autonomous-Vehicle-Information-Library/for-technology>
 - Information / owners manuals for Level 2 and level 3 is typically only available for owners; Argo information on level 4 is not ready for public consumption yet; will publish emergency response information on their website for them to know what to do if they come upon one in the field
 - Are the technology “desks” at dealerships providing orientation and training that is different from vehicle manuals and videos?
 - <https://pavecampaign.org/resources/?cat=terminology>
- Deliverable Outline
 1. Background
 2. Public Confusion about Technology
 3. Stakeholder Interviews
 4. Current Perspectives and Understanding
 5. Automated Vehicle Technology & Human Behavior
 6. Public Knowledge and Perceptions of Automated Vehicle Terminology
 7. Recommendations and Strategies
 - Stratify differences between L2 and L4
 - Use cases
 - What do legislators need to know?
- Comments:
 - what are we trying to accomplish with this exercise? We want to provide recs and strategies for new vehicle owners, what information do they need to know about that vehicle; terminology is important to start that information dissemination
 - State Highway Safety Office (educating the public on road safety); could be a source of funding to provide education to the traveling public since this is focused on personal ownership
 - personal ownership as well as others working with the vehicles
 - How will the information be delivered? Directly to the driver, to rental car companies, to dealers, etc.? The audience is listed as the ADAS user; there are various paths to that user. Does the pathway make a difference?

IV. Next Steps – Bob Brydia, TTI

- Continue with interviews, reaching out to new contributors
- Develop a first draft of the deliverable, sent to committee for review and discuss.

V. Closing Remarks – Zeky Reyna and Shelly Mellott

- Be on the lookout for an invitation to a Full Task Force meeting in the near future (most likely virtual)
- We appreciate the input of all attendees and members.
- Don’t hesitate to reach out to the TTI team if you have additional questions or comments.