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TECHNICAL MEMORANDUM

TxDOT IAC – Technical Support to the CAV Task Force

DATE: November 12, 2021

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: Safety, Liability, and Responsibility Subcommittee
October 20, 2021, Meeting Notes

Attendees:

Andrea Chavez	Grace & McEwan Consulting, LLC
Andrea Gold	University of Texas Center for Transportation Research
Anne O'Ryan	AAA Texas
Bart Teeter	TxDPS
Beverly Kuhn	Texas A&M Transportation Institute
Beverly Storey	Texas A&M Transportation Institute
Brad Schlueter	USAA
Daniel Goff	Kodiak
Darran Anderson	Texas Department of Transportation
Ed Seymour	Texas A&M Transportation Institute
George Villarreal	Texas Department of Transportation
Hannah Barron	Austin Transportation Smart Mobility Office
Jason JonMichael	City of Austin
Jeff DeCoux	ATRIUS Industries, Inc.
Jordan (Alex) Payson	City of Austin
Krishna Satti	Michael Baker International
Kristie Chin	University of Texas Center for Transportation Research

Leighton Yates	Alliance for Automotive Innovation
Maniel Vineberg	CAVWAY
Mark Worman	Texas Department of Insurance
Monika Darwish	Embark
Rama Dhanikonda	City of Richardson
Richard Steiner	Gatik
Robert Brydia	Texas A&M Transportation Institute
Sam Dreiman	ARGO AI
Sam Lott	Automated Mobility Services LLC
Sly Majid	Argo AI
Tony Reinhart	Ford Motor Company
Zeke Reyna	Texas Department of Transportation

I. Opening Comments/Roll Call – Zeke Reyna, TxDOT

- Welcome to all subcommittee members
- Roll call of members and attendees
- Introductions of meeting facilitators

II. Chair Welcoming Statement – Bart Teeter, Texas DPS / Michael Walton, UTCTR

- Thanks to everyone for being here and taking time out of your day
- Thanks to TTI team for all they do behind the scenes and between meetings

III. Preview of Website Changes – TTI Team

- We are working on improving the CAV Task Force website (currently in staging) to be made public within next two weeks.
- We’ve taken some of the products from last year, such as the Glossary from Terminology paper. It is now a completely interactive online tool.
 - TxDOT to do outreach to other states and entities to make sure awareness of this information and come to agreement about best definitions and verbiage.
- Revamped News links to display top ten, most recent. Updated weekly.
- Links to each subcommittee at bottom of webpage. Subcommittee pages have been updated with graphics and complete set of documents (meeting notes and products)
- The Deployment Map has been updated. We have listing that is being validated via websites and press releases.
 - This is a key component of the website, but we depend on your interaction for that.
 - We have chosen to display with pinpoints rather than sections of roadway.
 - Click on a pinpoint and more information will display.
 - If you would like your deployment added, please submit city and brief paragraph description via email to Zeke Reyna and/or Bob Brydia so we can keep the listing as accurate as possible.
- We would love to have your feedback to make sure we are capturing all information available on this website.

IV. Feedback Exercise on Subcommittee Deliverables – TTI Team

- Please refer to read ahead material sent via email, accessible on the Mural Board.
- This document was laid out so that all participants could see:
 - What we are going to do
 - How we are going to do it
 - Who we are going to talk to
 - The subjects we want to talk about
- Today’s meeting is important, as it sets the framework for everything we are doing now through the end of the calendar year.
- Process to Product Infographic

FOCUS OF PLAN: Primary focus is to develop guidance for CAV implementation by identifying specific digital and physical infrastructure needs and gaps. This includes addressing the industry’s direction and preferences.

REVIEW AVAILABLE INFORMATION

IDENTIFY INFRASTRUCTURE NEEDS / GAPS

CONDUCT INTERVIEWS

- need to ensure we end up with a sharable end product; proprietary or sensitive info to be handled accordingly
- Try to finalize list of questions and split into digital and physical

DELIVERABLE PRODUCT

- seems to be a reasonable approach; recognize things might need to be limited because of proprietary issues
- consider how this can feed into the website and ensure it remains a living document
- potential educational outreach and products that reach the traveling public (rest areas, pump toppers, etc.)
- requirements and the pull of information related to safety; if you accept the concept of a system, we would like to build a system and make it safety critical; might influence the questions asked
- Tie off of Vision Zero?
- A number of comments related to taking a systems approach.
- See Comments in Chat regarding current publications
- different fleet operators deploying different technologies; systems approach: safe operations at junctions (paper); safety dedicated equipment at the junction governs how the vehicles operate through the junction

QUESTIONS TO ASK

- What obstacles are you encountering in your deployment of a CAV operation
- What does the DOT need to do/performance better to remove these obstacles?
- Systems approach to questions?
- prior to seeing the questions to be asked, would like to know:
 - the perspective of the TxDOT?
 - What does TxDOT want to know from industry?
 - Why do they want to know that?
 - How does it fit into the requirements pull perspective?
 - What are we trying to gain from this interaction?

- Other than just sending a list of questions, we need to preface it by what are we trying to gain from our interactions?
- Separate into physical and digital sections
- Insurance companies may have a lot to offer--how to bring them into this space?
- Ensure that different subcommittees are coordinating their requests to interviewees
- Associations also part of the dialogue; can come in a variety of ways throughout the various committees; how to bring them in; some questions will be specific to insurance companies and other associations
- We will refine question list, separate into digital and physical

V. Next Steps – Zeke Reyna

- We will take this information, dive in, and start engaging
- Time frame to bring information to this subcommittee for dialogue should be 4-6 weeks but will be determined in process
- If you have information you want included on the CAVTF website, please let us know ASAP as it will be going live soon.

VI. Closing Remarks – Bart Teeter, Texas DPS

- Thanks to TTI team and all who have participated toward this effort
- Looking forward to the refinement of questions and in particular, resolving the “why” as to why we are asking these question.
- Encourage everyone that if you have thoughts on this over the next few days, come back to the Mural board and add them or email Zeke or Bob.

Additional Comments in Chat:

Several new publications that that have been published in conference proceedings over the past few months.

- [Safe Operations at Roadway Junctions – Design Principles from Automated Guideway Transit](#)
 - Coauthors: J. Sam Lott; Stanley E. Young, Ph.D.; Lei Zhu, Ph.D.
 - Proceedings of the SAE/AUVSI 2021 Business of Automated Mobility Forum
- [A Safety and Management Framework to Enable Automated Mobility Districts in Urban Areas](#)
 - Coauthors: J. Sam Lott; Stanley E. Young, Ph.D.
 - Proceedings of the ASCE 2021 Intl. Conference on Transportation and Development

I am pleased that SAE has chosen the SAE conference paper as one of the best from the BAM Forum. It will also be published in the SAE *International Journal of Advances and Current Practices in Mobility* that will be released online after the first of next year.