

ARTS22 Breakout Session Title:

251-Vehicle Technologies for Crowd-Sourced Roadway Environment Assessment

Session Contact/Organizers:

- Rob Dingess, President, Mercer Strategic Alliance (Co-Organizer)
- Paul Carlson, CEO, Automated Roads (Co-Organizer)
- John Corbin, Transportation Automation Program Manager, FHWA (Session Contact)

TRB Sponsor/Partner Committees (if any):

TRB Regional TSMO Committee

TRB Traffic Control Device Committee

TRB Freeway Operations Committee

ASCE CAV Impacts Committee

Session Description

The session for roadway transportation agencies and industry partners will introduce and explore solutions for applying crowd-sourced roadway environment data generated by automated driving systems (ADS). The first part of the session will examine innovative partnerships designed at improving the evaluation and development of advanced driver assistance technologies. The second part will present the background, current state of art, and near-term future of crowdsourced roadway data assessment as a system within systems. The third part of the session will present case studies from the major stakeholder groups. Lastly, the presenters will summarize the session, identify key points and possible next steps to incorporate ADS-based roadway environment assessment crowdsourcing into national network-level roadway-ADS integration readiness.

Goals/Objectives/Outputs

- Understand automated vehicle-based technologies that perceive the roadway environment, and their integration by industry into crowd-sourced roadway data solutions for the highway infrastructure industry.
- Explore emerging and potential applications of crowd-sourced roadway data solutions, particularly as these applications pertain to planning and accommodating automated driving system (ADS) specific operational design domains (ODD).
- Define critical issues and a near-term national institutional approach to advance the use of crowd-sourced roadway environment assessment data for roadway-ADS integration.

Agenda

Length: Three hours

1. Session Overview and Introduction: (Rob Dingess, Mercer Strategic Alliance) [10 minutes]
2. Connecticut DOT and Consumer Reports – Infrastructure and Automated Driving Systems Project - Kelly Funkhouser (Consumer Reports) [20 minutes]
3. Lisa Miller (Eastern Transportation Coalition) [20 minutes]

4. Maximizing HASS and advanced driver assistance system technologies today.
 - a. Robert Heilman, Director, Highly Automated Systems Safety (HASS) Center of Excellence (COE) USDOT [20 minutes]

Interactive panelist-audience forum, discussion questions include: (20-minutes)

- What are valuable applications now?
- How could applications be evaluated and advanced?
- Are there national activities that would support advancements?
- What could be future applications of crowdsourced roadway assessment?
- What are local, State, national, and international agencies' roles in crowdsourced roadway assessment today? In the near-term? In the long-term?

10 Minutes: Break

Crowdsource Data Existing or anticipated examples of how crowdsourced roadway assessment data functions or will function within a system of systems.

- b. What crowdsourced roadway assessment data could expand and/or enable by 2030.
- c. How data on variables like advancements in vision-based sensor technologies, traffic conditions, work zones, weather, asset condition, pavement markings, and pavement distress fit into future of management of road transportation.

Paul Carlson, Introduction [10-minutes]

- i. Mark Davis, Head of Data Services & Business Development, Mobileye Data Services Road Survey and Analytics [10 minutes]
- ii. Jeff Barghout, CEO, ROBOCIST, Road Triage, Road Asset Analytics [10 minutes]
- iii. Silvia Hes, Nexar Maximizing value from the digital twin [10 minutes]
- iv. Valerie Brugeman (Invited), ROMO, Mercedes Benz [10 minutes]
- v. Niti Anand (Invited) Future Roads, GM [10 minutes]

20 minutes: Interactive panelist-audience forum, discussion questions include:

- What are valuable applications now?
- How could applications be evaluated and advanced?
- Are there national activities that would support advancements?
- What could be future applications of crowdsourced roadway assessment?
- What are local, State, national, and international agencies' roles in crowdsourced roadway assessment today? In the near-term? In the long-term?