Center for Transportation Research Symposium 2023

Agenda

11:00 - 12:15	Posters – Transportation Research at CTR
12:15 - 1:00	Lunch
1:00 - 2:15	Podium Session
2:15 - 2:45	Coffee Break
2:15 - 5:15	Demos (Atrium and Outside)
2:45 - 3:45	Panel Discussion – How Districts Innovate?

Demo Map + Session Details

Poster Session

Wednesday, April 19, 2023

TEXAS SMARTTRACK

2023 CTR Symposium - Demonstration Participants

	Company / Organization	Description	Location
1	Yunex	Yunex Traffic will demonstrate Vison Zero safety applications for Vulnerable Road Users (VRU), such as pedestrians and cyclists. The demonstration uses commercially available sensors, smart phone apps, and Connected Vehicle technology to continuously predict the paths of nearby vehicles and VRUs for warnings to both drivers and VRUs that are on a crash course.	Outdoor
2	University of Texas CEM AV	UT CEM AV will demonstrate the perception sensor suite (radar, lidar, camera) of the fusion autonomous vehicle. Specifically, we will show how lidar sensors can provide 360-degree 3D sensing of objects near the vehicle.	Outdoor
3	Volkswagen Autonomous Driving	Volkswagen Commercial Vehicles has been developing automated driving as a service for people and goods transport in Germany. VW is planning to bring this mobility service to the United States and is very interested in Texas. The ID Buzz, which debuted in Texas at SXSW last year, will be the initial base vehicle on which VW will offer automated rides and goods delivery. VW's booth will feature two videos. One video will explain how the automated ID Buzz uses a multitude of sensors, including cameras, radar, and Lidar to collect information and perceive and analyze its surroundings to drive safely. The other video will show how accessible design features in a VW special purpose automated vehicle will provide improved mobility solutions for people with disabilities.	Indoor
4	Tesla	Tesla will be demonstrating Tesla's current level 2 driver's assistance feature capabilities. This may highlight how emerging transportation technologies can potentially improve roadway safety and mobility and provide TxDOT and UT CTR with ideas on how to implement the emerging technologies into their future programs.	Outdoor
5	TxDOT Drone	TxDOT's drone program has taken off to bring the benefits of Unmanned Aircraft Systems to TxDOT's daily operations. From traffic monitoring to design survey, construction progress documentation to emergency response, drones will allow TxDOT to gather critical data in a safer, more effective method all at a reduced cost. Today you will learn how to get your team members licensed to fly drones for TxDOT, and how drones in TxDOT will help us monitor traffic, respond to traffic incidents, and increase our capability to make the best decisions in traffic safety operations, and management.	Indoor
6	University of Texas PHD Candidates: Drone-based Digital Twin model generation and Virtual Reality Supporting Resilience Research	UT Civil Engineering PhD students, Linchao (Lin) Luo and Yu-Chen (Gabrielle) Lee, both supervised by Dr. Fernanda Leite, will be presenting work related to digital twins and virtual reality in two active research projects: • In the Department of Energy (DOE)-funded Southeast Texas Urban Integrated Field Lab, we are integrating climate, flooding, and air pollution models to co-design climate-resilient infrastructure solutions. We will be demonstrating how we have been leveraging drone images to generate accurate 3D terrain models in the Beaumont-Port Arthur region of Texas. These models will be later used to	Outdoor + Indoor

		simulate multiple scenarios of climate-resilient infrastructure design solution under different flooding assumptions. • In Microsoft and Planet Texas 2050-funded research, we have developed a virtual reality demo for community engagement on the importance of invisible infrastructure to build resilience in our cities. We will share a virtual reality model of the Seaholm Power Plan underground water infrastructure, in downtown Austin, using Microsoft Hololens2.	
7	UT Pavement Texture	Our demo will present non-contact sensors developed by our team, which are designed to capture surface texture data. By analyzing the measured texture, we can provide users with essential information about the road, such as determining the pavement surface type and predicting the coefficient of friction (in comparison to the GripTester). We will also demonstrate a faulting verification tool, which consists of a beam equipped with a laser sensor that measures the entire length of a lane.	Outdoor
8	Intel Ped Detection	This demo will showcase how roads equipped with CV2X enabled smartRSU running on Intel's edge compute using Intel's AI/ML software (Scenescape & Geti) , V2XHUB and Harman CV2X modules (OBU & RSU) can improve VRU safety. During the live demo you will be able to experience 1. How smartRSU perceives the environment and sends awareness messages to C-V2X-enabled OBUs on the vehicles. The Display in the vehicle will show the presence of the VRUs in the vicinity to alert the driver. 2. How smartRSU can send information to vehicles with low latency and capable of enabling wide variety of use cases.	Outdoor
9	Intel Fleet Management	With a projected ~$9.13 Billion TAM by 20261, fleet activities have already been part of people's daily life, e.g. product packages ordered and delivered by eCommerce 24/7. Intel Silicon and SW stacks provide a strong foundation to modernize the industry through: • Workload consolidation – The piece-by-piece traditional telematics features can be built on a single Intel processor based edge node platform with compute, graphics, networks, GPS/GNSS, and vehicle CAN interfaces • ML/DL and VisionAI – AI models and inferencing provide near real-time understanding on the status of the driver, the vehicle, and the environment. • E2E Cloud Connectivity and Device Management – Fleet operators can remotely get vehicle and driver data insights, and perform SW deployment and updates	Indoor
10	Rekor + HAAS	Rekor Command is an AI-driven technology, providing traffic management centers with a holistic view of what is happening on the roadways. Through real-time incident alerts, integration with existing roadway assets, and streamlined communication with the public, you are able to make quick and informed decisions about how best to manage your roadways.	Indoor

		During the demonstration, Rekor team members will be providing a live view of Rekor Command in action with current Texas partners. You will see how the technology, using data fed from multiple real-time sources, alerts of a potential incident, how TMC operators verify and manage the incident, and how they communicate the incident to the public in real-time.	
11	Mobileye	"Mobileye™ is a global leader in collision avoidance and computer-vision artificial intelligence. With technology trusted by dozens of OEMs, Mobileye's safety solutions aim to reduce collisions and improve driver performance for fleets across all industries through real-time, proactive alerts. The Mobileye 8 Connect™ is an AI-powered aftermarket collision avoidance system available with a single, forward-facing vision sensor suitable for almost any vehicle. It scans the road and judges how far we are from obstacles and potential dangers. It provides the operator with 5 real-time alerts through with Audio and Visual warnings. Whatever your fleet size or safety challenges, we can help keep your drivers and vehicles safer on the road.	Indoor
12	The Ray	The Ray's work begins at the world's first sustainable highway, an 18-mile stretch of Interstate 85 in West Georgia where we test and demonstrate the evolving ideas and technologies that will transform transportation infrastructure. The Ray Highway features more than a dozen projects including a one-megawatt solar array with 2,600 high-efficiency solar panels complete with meadows of pollinator-friendly wildflowers, 3M's smart road striping for connected vehicles, Panasonic's CIRRUS V2X (vehicle-to-everything) platform, and a rubberized asphalt mix made from recycled tires that is circular and extends the life of pavement.	Indoor
13	TxDOT Human Trafficking	The transportation industry is often on the front lines of human trafficking. Awareness, education and collaboration are all important in the battle against human trafficking as traffickers typically depend on transportation systems to operate and move victims. TxDOT and our contractors have the potential to combat human trafficking through our planning, programming, and daily operations.	Indoor
14	Texas SMARTTrack		Indoor
15	Luminar	Luminar is an autonomous vehicle sensor and software company with the vision to make autonomy safe and ubiquitous by delivering only lidar and associated software that meets the industry's stringent performance, safety, and economic requirements. The demonstration will include a suburban (style) SUV with the trunk open and their lidar technology demonstrated on a tripod near the vehicle..	Outdoor

16	Beep	Beep delivers the next generation of autonomous, shared mobility solutions through its software and services. Specializing in planning, deploying, and managing autonomous shuttle services for private and public communities, Beep safely connects people, places and services with autonomous networks that reduce congestion, eliminate carbon emissions, improve road safety, and enable mobility for all. Our video will showcase a number of our current deployments and vehicles, along with a preview of the next generation of autonomous shuttles, recently unveiled at CES 2023.	Indoor

THE UNIVERSITY OF TEXAS AT AUSTIN
CENTER FOR TRANSPORTATION RESEARCH

James Hart Trail

Sidewalks

Demo area

Demos along
Exploration Way
(roadway remains open)

Exploration Way

Commons
Conference
Center

C.P. Boner Trail

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CTR SYMPOSIUM 2023