

CAT Coalition

Strategic Initiatives Technical Working Group

January 28, 2021 Webinar

Notes and Summary of Discussions

Summary of Action Items

1. Any members interested in contributing to the development of a resource to support agencies understand the transition from DSRC roadside units to C-V2X should email Dean Deeter at deeter@acconsultants.org.
2. Joe to contact Jim Misener to advance the concept of a resource for agencies to prepare for the DSRC to C-V2X transition.
3. Dean to poll members to request their interest level in connected vehicles supporting electronic toll collection (ETC).

Welcome

Blaine Leonard welcomed everyone to the webinar. Approximately 57 members and guests joined the webinar. A list of those in attendance is provided at the end of these notes.

Ongoing Commitment to Outreach and Knowledge Transfer

Blaine invited members to identify additional topics and resources that would be of interest to this group or additional members who would be a benefit to or would benefit from this group. This is an ongoing invitation so if something or someone comes to mind after this webinar, please contact Blaine Leonard or Dean Deeter with your input and ideas.

V2I Applications – Las Vegas CV Deployments

Joanna Wadsworth, Assistant City Traffic Engineer from the City of Las Vegas, highlighted the CV applications deployed in the Las Vegas area.

Innovation District with Smart City Infrastructure

In February 2016, the downtown Las Vegas area was defined as an innovation district to promote technology within the city with the goal of increasing safety. With 12 subdistricts in the downtown area, Las Vegas can look at CV deployments in many diverse use cases including part of the Las Vegas resort corridor, an active arts community, and a thriving medical district. The City focuses on learning to enhance the quality of the downtown experience, assist with planning, and stimulate economic opportunities. Las Vegas worked to install an infrastructure with a robust fiber optic signal system to accommodate connected vehicles. In addition, they installed approximately 11 miles of additional fiber to establish downtown Las Vegas with a smart city infrastructure.

DSRC Deployments

To date, the city of Las Vegas has installed 85 DSRC units. These units are used in various stages for testing autonomous technologies and advancements. As a region, including the resort Corridor and downtown, the Las Vegas region has installed over 175 DSRC roadside units (RSUs) that broadcast SPaT and MAP messages. The region is exploring options and approaches to convert the DSRC RSUs to Cellular V2X (C-V2X) units.

Driverless Shuttle Deployment

The Driverless Shuttle Deployment pilot project occurred from November 2017 to October 2018. Over 32,000 riders experienced the self-driving shuttle in Las Vegas' Fremont Entertainment District on public streets in mixed flow with other traffic. Self-driving shuttles benefitted from the SPaT/MAP data broadcast by the connected traffic signals. Lessons learned from this project include the need for a high level of support and educational outreach.

Private Driverless Vehicle Operations

Motional (formerly Aptiv) has tested autonomous vehicles within Las Vegas and began operations with approximately 30 vehicles providing autonomous rides to passengers. Due to COVID they stopped operating with passengers, but Motional is still testing and routinely provides feedback on operating autonomously to the City of Las Vegas. This feedback has been reporting issues such as the RSU placement affects the line of sight and map programming requires a dynamic map.

Cisco Connected Intersections

Twenty-five (25) downtown RSUs were upgraded to handle LIDAR. The goal of this project was to integrate data from different sources. The City of Las Vegas was looking at data quality issues with RSU and LIDAR in traffic signal units. The data was made available to the University of Las Vegas and partner agencies. Desired outcomes from this project would be to identify ways to inform drivers of signal phasing and collect information about pedestrian activity to optimize traffic signals for congestion management.

Las Vegas Medical District

In 2017, the City of Las Vegas partnered with RTC to connect downtown Las Vegas to the medical district. This area is divided by a railroad and I-15 and has a lot of pedestrian and bicycle activity. The project focus is safety within the project area. The project has 4 autonomous shuttles. Three (3) will operate simultaneously as automated circulators within the medical district while 1 will serve as a backup. Pedestrian detection is also included within the scope of this project. The project uses shelters with WiFi, 300 OBUs and 20 RSUs. A ConOps and System of Design have been completed and a design consultant will come on board in March 2021 to begin the design. Operations are scheduled to deploy in Spring 2022.

Lessons Learned and Additional Considerations

Starting small in their V2I deployments allowed the City of Las Vegas to learn as they went and to build on that knowledge. Partner agencies enacted AV-friendly legislation and regular public-private partnership meetings ensured the key players were in alignment. The key to these projects was to identify meaningful use cases.

The City of Las Vegas suggests that scheduling takes time and resources. Operations and maintenance require ongoing support for staff training, monitoring the platform. Establishing a redundancy of RSUs and integration with pedestrian and bicycle safety applications are other considerations. Joanna encouraged agencies to look for opportunities for funding. The transition from DSRC to C-V2X will have financial impacts for transition planning and upgrades.

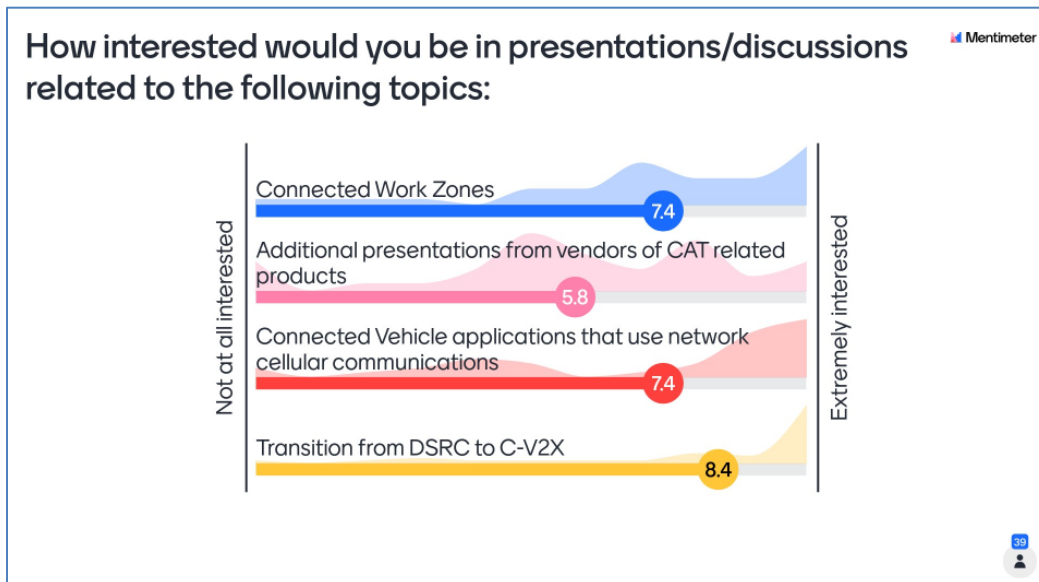
CAT Coalition Policy, Legislative Regulatory (PLR) WG Update

Paul Ajegba (Director of the Michigan Department of Transportation and Co-Chair of the CAT Coalition PLR Working Group) provided a brief update on the group’s activities. Over the past 18 months, the PLR WG has been reviewing AV legislation to understand the extent to which terminology is consistent with AV legislation that has been enacted by several states. Over two-thirds of states have AV legislation or an executive order regarding AV, however, the coordination efforts differ from state to state. In addition, the PLR WG hosted presentations from two key university-led research activities: University of Washington School of Law and University of California, Davis.

Based on what the PLR WG learned from these activities, they identified a proposed direction this past fall to support national harmonization for AV legislation and submitted this research proposal to NCHRP 20-06 (Legal Problems Arising out of Highway Programs). Paul or Jennifer Toth (co-chair of the PLR Working Group) will update this working group on progress with this proposal.

Poll of Strategic Initiatives Members

Blaine invited members to participate in an on-line poll to help prioritize activities of this working group. The topic of greatest interest to the group was the transition from DSRC to C-V2X, with Connected Work Zones and Connected Vehicle Applications that use network communications next highest interest. The full poll results are shown below.



Proposed New Resource

Blaine led a discussion regarding the need for a resource to support the SPaT Challenge sites as they prepare to migrate deployments of DSRC to C-V2X, based on the FCC reallocation of the 5.9 GHz band.

Blaine reminded members that this working group developed a number of resources during the SPaT Challenge. In addition, the SPaT Challenge conducted 13 webinars that introduced key concepts, led tutorials, and facilitated peer sharing. These webinars continue to be available at transportationops.org/spatchallenge.

Blaine asked the group if they saw the need for a resource to support sites in the transition from DSRC to C-V2X or if they were aware of anyone else already doing this. Blaine raised the question whether this is something that the Strategic Initiatives Working Group should take on, perhaps in collaboration with the Technical Resources Working Group.

There was interest in developing a resource with information to help agencies understand the transition from DSRC to C-V2X. Jim Misener spoke to the critical need for a document such as this and offered to support the effort. Joe Averkamp volunteered to contact Jim and create a small group to advance early draft content. Joe would like to hear from anyone else who is interested in contributing. Individuals interested in being involved were invited to let Dean know in the chat or reach out to Dean, Joe, or Blaine after the meeting. Shane McKenzie, Kentucky Transportation Cabinet, and Ahmad Jawad offered support and Ray Derr suggested that NCHRP 23-10 may be able to provide some assistance. The group will report back with preliminary information at the April Strategic Initiatives WG meeting. In addition, the group will contact the Technical Resources Working Group to look for additional volunteers and expertise.

Electronic Toll Collection (ETC) in Cooperation with V2I

Joe Averkamp discussed the Electronic Toll Collection (ETC) use case for V2I communications. Joe described the activities of the International Bridge Tunnel and Turnpike Association (IBTTA) effort to deliver nationwide interoperability such that on-board units (OBUs) could serve as toll tags. There is an SAE standardization effort work in progress (SAE J3217 – Profiles for V2X-Based Fee Collection). Joe asked if this group was interested in receiving future updates on ETC and the message standard structure for V2X based fee collection. Blaine acknowledged that many western states are not concerned with tolling, but the concept of road user charge (RUC) is being explored and this may be an opportunity to explore how technology might be used in both tolling and RUC. Joe suggested polling members of this group through email to gauge their level of interest.

Update on Emerging Topics

Joe invited members to share any questions or updates on emerging topics. He mentioned that many of the ATCMTD grants are related to connectivity and the group may want to ask for presentations on some of these projects.

A discussion emerged on the increasing need for representatives from DOTs to have a mechanism to communicate with private sector data and service providers or those operating third-party or original equipment applications. Jim Misener described the 5G Automobile Alliance (5GAA) and indicated that the 5GAA would welcome more infrastructure owner operator involvement. Those with opinions about this discussion will continue to discuss it offline.

Partner Reports: USDOT, ITS America, ITE, Other

USDOT – Deb Curtis announced that the Work Zone Tool Chain final report will be available soon and the RSU Spec Group will have a draft of proposed standards available in February. The Connected Intersection Project is currently soliciting for volunteers to test new clarifications.

AASHTO – Tom Kern reported that the FHWA NPA was released in December to look at the MUTCD. This will set the stage for automated driving systems. The AASHTO Committee on Transportation System Operations (CTSO) is looking at cross cutting themes and will begin aligning TSMO and CAT, recognizing the value of highlighting emerging and best practices.

ITS America – Carlos Alban shared that ITS America hosted a webinar with members of our Future of V2X Working Group to present the Working Group’s preliminary 30 MHz Application Map to a public audience. The Application Map attempts to identify which V2X message types and applications would likely be deployed in a limited 30 MHz spectrum environment and which would likely be lost in such a scenario. The Application Map serves two purposes, to show the need for the full 75 MHz of spectrum in the 5.9 GHz band by identifying the applications that will likely be lost and to begin to chart a path forward to safely deploying V2X technologies in limited spectrum should the FCC’s proposal be finalized. A recording of the webinar, a copy of the presentation, and ITS America’s 30 MHz Application Map are available on our [website](#). You can find more information about the 30MHz Application Map [here](#). For questions about the application map work, please contact Tim Drake, VP Regulatory Affairs and Public Policy at [tdrake@itsa.org](mailto:t Drake@itsa.org).

Close

Blaine thanked the members for their participation and noted that the work plan activities and regular meetings of the CAT Coalition working groups are scheduled to conclude in November 2021. The Strategic Initiatives Working Group has 10 activities, some of which are largely completed and five that are still active. Four of the active activities were addressed today. The CAT Coalition will document the products and narrative of the coalition. Association leaders are discussing what might follow.

The next webinar is scheduled for Thursday, April 22, 2021, at 2 pm Eastern.

TWG 1 January 28, 2021 Webinar Participants

Blaine Leonard (Chair)	Guprit Hansra	Mark Peters
Adam Merchant	Jack Hall	Mauricio Guerra
Ahmad Jawad	Jeffrey Bergsten	Mike Kronzer
Alan Clelland	Jeremy Schroeder	Mike Schagrin
Barry Einsig	Jesus Ruiz	Mohamad Talas
Bob Murphy	Jianming Ma	Mohamed Gallaa
Carlos Alban	Jill	Mohammed Hadi
Christian Kulus	Jim Frazer	Patrick Chan
Daniel Saile	Jim Misener	Patrick Son
Dave Miller	Joanna Wadsworth	Paul Ajegba
Dean Deeter	Joe Averkamp	Qamar Al Dick
Deborah Curtis	John Lower	Ray Derr
Donna Clark	Jon Riehl	Ray Starr
Doug Hohulin	Ken Yang	Rich Deering
F Thibodeau	Kent Kacir	Roxane Mukai
Frank Provenzano	Kyle Garrett	Shane McKenzie
G Scalf	Liana Mortazavi	Stephen Mensah
Gunnar Rhone		

Stephen Lockwood
Steve Misgen

Susan Catlett
Tom Kern

Tom Timcho