Cooperative Automated Transportation Coalition
Technical Resources Working Group
Quarterly Meeting Summary
Wednesday, November 13, 2019 11:00 am - 12:30 pm Eastern Time

Action Items

1. Everyone: Share leads, links, or attachments of resources with Faisal or Jeremy on:
   - Suggestions from WG members on ways to enhance impact, including: 1) proposed new WG Members, 2) communications with/Involvement in other initiatives, and 3) knowledge resources to include on the CAT Coalition Website.
   - Resources or information to support SPaT and Connected Fleet deployments.
2. Everyone: Provide feedback on CV Deployment Resource chapter on CV and ITS Systems.
3. Everyone: Provide feedback on AV I-I Communications 101 resource content.
4. Everyone: Contact Faisal or Jeremy if interested in completing a survey for the CVs in Rural and Connected Corridors effort for NCHRP.

Meeting Summary

Ongoing Commitment to Outreach and Knowledge Transfer

- Barbara Staples brought up a Noblis effort with Elena and Deb at USDOT and offered to share the resource that was developed about SPaT and the systems engineering process. She will reach out to Elena and Deb about sharing with this group at a future webinar.
- Bob Rausch noted that the three CV Pilot sites have conducted CV operational readiness webinars that were recorded and available online. FHWA has been releasing other documentation online also. The THEA and NYC sites are beginning to collect data now and are documenting lessons learned as quickly possible.

Resources WG Recap, CAT Coalition Update, and Partner Updates

Navin provided a brief recap of the previous Resources WG webinar in August. Jeremy provided an update on CAT Coalition activities, including updates on webinars being conducted by CAT Coalition working groups. Of particular interest:

- Cellular V2X resources provided by Jim Misener following last quarter's presentation are available at: https://www.qualcomm.com/products/automotive/c-v2x
  - Introduction to C-V2X: https://www.qualcomm.com/media/documents/files/introduction-to-c-v2x.pdf
  - C-V2X Experimental License (User Guide): https://www.qualcomm.com/media/documents/files/c-v2x-experimental-license-user-guide.pdf
  - C-V2X Technology Overview: https://www.qualcomm.com/media/documents/files/c-v2x-technology-overview.pdf
  - C-V2X ITS Stack: https://www.qualcomm.com/media/documents/files/c-v2x-its-stack.pdf

- C-V2X Technical Performance (FAQ):
    https://www.qualcomm.com/media/documents/files/c-v2x-technical-performance-faq.pdf

- Connected Fleet Challenge Webinar #2: November 21, 2019 at 2p ET:
  https://transportationops.org/event/webinar-series-connected-fleet-challenge-webinar-2
- Connected Fleet Challenge Webinar #3: January 9, 2020 at 2p ET:
  https://transportationops.org/event/webinar-series-connected-fleet-challenge-webinar-3
- Connected Work Zones: Mapping Toolchain Overview Webinar: November 22, 2019 at 1p ET:
  https://transportationops.org/event/connected-work-zones-mapping-toolchain-overview

Additionally, members are encouraged to provide information on planned or active Connected Fleet Challenge sites on the website, and send resources to Faisal or Jeremy for posting on the website.

A variety of updates from partners and WG members were provided, including the following:
- Govind noted two updates from USDOT:
    - An Infrastructure Readiness for Automated Vehicles presentation was conducted a couple weeks ago and the related project is complete.
    - An initial CARMA webinar took place last week that was recorded and available online.
- Ray Derr provided an update from TRB about a cybersecurity project that has been completed and a self assessment that can be done on the NOCoE website. He offered to present this on a future Resources WG webinar.
- Tracy Larkin noted that survey questions about autonomous shuttles have been completed and will be sent out soon to areas with deployed shuttles, including states, MPOs, and cities, to gather additional lessons learned and parameters being used.
- Barbara Staples noted a survey for an NCHRP project that will be sent out via email to IOOs regarding CVs in Rural and Connected Corridors, and encouraged recipients to respond. Follow-up interviews will be conducted. Contact Faisal or Jeremy to let Barbara know if interested in participating.
- Alan Clelland said TS-10 is coming out with a draft standard in December that will be shared with various organizations for review and content. The Resources WG will receive this draft standard for comments.
- NTCIP 1218 update may be provided on a future webinar. Jean Johnson noted that their working group has started to approve document, and it will go to the larger committee for a vote to be accepted before being sent to the associations for a vote to adopt. She is hoping for it to be finished by the first half of 2020.

CV Deployment Environment Discussion
Jeremy presented an update of this effort to develop a resource for agencies considering a CV deployment to comprehensively understand the bigger picture of considerations, upgrades, and technologies needed to have a fully operational CV environment. He presented the initial section on CV and ITS Systems, as well as the feedback received from the volunteers. Members noted that the format of the information in bullets is helpful as it hits the highlights and is easier to digest, understand, and process by pointing to additional information and not get bogged down.

Jeremy will send the Roadside CV and ITS Systems section to WG members for additional review and comments. The draft In-Vehicle Systems and Vulnerable Road Users section is available for review and

input by volunteer group now and will be shared on the next webinar. The TMC-ITS Systems and Executive Summary sections are being drafted.

Communications 101 Resource by AV I-I Working Group

Tracy Larkin-Thomason presented an overview of the resource being developed by the CAT Coalition AV Infrastructure-Industry Working Group. The objective of the resource is to provide IOO executives and decision makers a common understanding about the communications needs, technology options, and terminology for CAT/CAV. Feedback from WG members is requested regarding the proposed resources and approach, organization, and recommendations for additional content, terms, or context.

Jeremy shared the draft content that has been developed for this resource. Comments from working group members included the following:
- Use the term "communications" methods not telecommunications, which is erroneous.
- Include types of network communications to bring in vulnerable road users.
- Explain broadcast v unicast for I2V and V2V communications.
- Consider addressing how Bluetooth fits in with the communications ecosystem?
- The CV pooled fund developed a glossary of terms that could be referenced. Ray Derr will share this.
- Break this resource into small enough pieces to remain consumable
- Consider starting with "why": why do/should agencies care / need these communications methods?

CV Procurement State of the Practice

Greg Hatcher presented about a document that Noblis developed for USDOT ITS JPO to document the CV Procurement State of Practice. Slides from this presentation will be posted on the Resources WG website.

Upcoming Webinar & Close

Members should have received a new meeting invite from Jeremy for Resources Working Group meetings in 2020 that will be held on:
- Wednesday, 2/12/2020 at 11am ET
- Wednesday, 5/13/2020 at 11am ET
- Wednesday, 8/12/2020 at 11am ET
- Wednesday, 11/11/2020 at 11am ET

Attendance

1. Faisal Saleem (Chair) faisal.saleem@maricopa.gov
2. Navin Katta (Co-chair) navin@savari.net
3. Aaron Greenwood Aaron.Greenwood@Leidos.com
4. Alan Clelland aclelland@appinfoinc.com
5. Barbara Staples barbara.staples@noblis.org
6. Barry Einsig BEinsig@econolite.com
7. Barry Pekilis barry.pekilis@nrc-cnrc.gc.ca
8. Bob Rausch robert.rausch@transcore.com
9. Cliff Heise cdh@iteris.com
10. Darryl Dawson ddawson@itsengineering-ltd.com
11. Debra Bezzina dbezzina@umich.edu
12. Doug Hohulin doug.hohulin@nokia.com
13. Eric Raamot eraamot@econolite.com
14. Gary Piotrowicz gpiotrowicz@rcoc.org
15. Govind Vadakpat g.vadakpat@dot.gov
16. Greg Hatcher greg.hatcher@noblis.org
17. Imran Inamdar imran.inamdar@kapsch.net
18. Israel Lopez israel.lopez@triuityeng.com
19. Jean Johnson jean.johnson@nema.org
20. Jeremy Schroeder schroeder@acconsultants.org
21. Justin Chan justin.chan@transpogroup.com
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