

# CAT Coalition

## Strategic Initiatives Technical Working Group

### October 22, 2020 Webinar

### Notes and Summary of Discussions

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#### Welcome

Blaine Leonard welcomed everyone to the webinar. Approximately 54 members and guests joined the webinar. A list of those in attendance is provided at the end of these notes.

Blaine recapped the organizational structure of the CAT Coalition, showing that the Strategic Initiatives Working Group fits under Programmatic and Strategic Activities. Ten Strategic Initiatives activities have been identified. Activities 1 through 4 are basically complete. Today's webinar will focus on activities #5 Examples and Benefits of Applications, #8 IOO/OEM Forum, #9 Partner Sharing, and #10 Deployment.

#### 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.

#### UK – Connected Vehicles Status

Andrew Graham discussed findings from research he conducted for the Royal Automotive Club in the United Kingdom. The project looked at the end-to-end process that needs to be in place to leverage benefits within five focus areas: in-vehicle signing, SPaT, asset management data, better signal settings (green light optimization), and smarter parking. The end-to-end chain considered processes from feasibility and funding to driver trust and identified gaps, work arounds, and common issues. Results showed that there were many business issues as well as technical issues. Focusing on outcomes, researchers believe that they can use existing mobile communications to perform the majority of connected vehicle applications (with the exception of safety critical services). Andy summarized the approach as addressing needs including using good quality data to and from the vehicle and traffic systems, building user trust in the data, substantiating a business case and model, addressing the UK skills shortage, and simplifying procurement of data and services. Andy also noted they are focusing on all vehicles, not just new cars, as the average age of vehicles in the UK is 7.9 years.

Darren Capes, from the UK Department for Transportation, expressed their interest in sharing information and knowledge with the US.

Alan Clelland asked whether the project used both cell network and DSRC delivery. Andy replied that for most of the project, cellular was good enough and that an earlier project had tried DSRC but was not as successful. Blaine inquired about the type of mobile data that was collected from vehicles and learned

that location data may be collected. Barbara Staples verified that the report, [Driven by Information](#), can be downloaded at [www.racfoundation.org](http://www.racfoundation.org) under Publications.

Blaine asked about the availability of cost-benefit studies and Andy recommended the State of the Nation report. Darren volunteered that other reports will be published around Christmas and that they are willing to share the reports.

## Recent V2I Hardware/Software Advances – RSU Vendors

The Strategic Initiatives Working Group is committed to having an open dialogue with equipment manufacturers to gain perspective on technology in the marketplace. Blaine introduced Iouri Nemirovski from Siemens who was invited to share his thoughts on a few questions. Other RSU vendors were also invited to attend but were not available so additional vendors will be invited to participate in the January webinar. The questions asked, and responses are summarized as follows:

**Q: What are the most significant changes or improvements to RSU technology in the past 2 years?**

A: RSUs have moved from simple devices to edge devices. Dual mode for CV2X and DSRC is getting more mature and more powerful and there is a growing maturity in implementing applications. The capability of RSUs is understood, but we need to know how to use the technology and identify a centralized way to manage the applications.

**Q: What approach do you take to develop dual unit RSUs?**

A: The use of a single Intelligent transport system (ITS) stack helps to maintain mature, stabilized platforms and allows additional functionality, such as multiple communications mediums, and allows existing units to be updated instead of replaced.

**Q: Does your architecture include embedded applications or are they separate from the RSU?**

A: Iouri described that their approach is to consider RSUs as edge devices, with applications included in the RSU, as needed. Recognizing that there are many applications that are not related to intersections, RSUs need to be able to work independent from the traffic cabinet.

**Q: What do you see as the biggest hurdles you are facing in the industry?**

A: Uncertainties in the communications spectrum has been challenging. Financing is another issue for public sector agencies. Funding for the deployment of RSUs competes with other transportation equipment and field devices. There is not a stable funding source for infrastructure to support connectivity.

## Enabling Connected Intersections Initiative – Tracking Connected Intersections

Blaine reminded members that he introduced the ‘Enabling Connected Intersections’ initiative in July. This initiative is being led by the IOO/OEM Forum SPaT/RLVW work group. The rationale behind the initiative is that many agencies have deployed SPaT/MAP broadcasts and their locally operated fleet vehicles (e.g. snowplows, transit buses, emergency vehicles) are receiving and using the data. However, the transition to production vehicles receiving and using data broadcast by agency operated broadcasts requires consistency in the interpretation of the standards. The Enabling Connected Intersections initiative is focused on the data integrity and business aspects of establishing communications with production vehicles. The emphasis is not on the specifics of the communications mediums. The initiative has a total of seven activities, summarized as follows:

- Action #1: Create and reach consensus on minimum requirements for intersection broadcasts of SPaT & MAP.
- Action #2: Summarize Industry Approach(es) to SCMS and develop IOO Guidelines
- Action #3: Test Approach
- Action #4: Reference Implementation and Functional Safety Assessment
- Action #5: Develop and Execute the Enabling Connected Intersections Outreach and Expansion Strategy
- Activity #6: Deployment Tracking
- Activity #7: O&M Approach

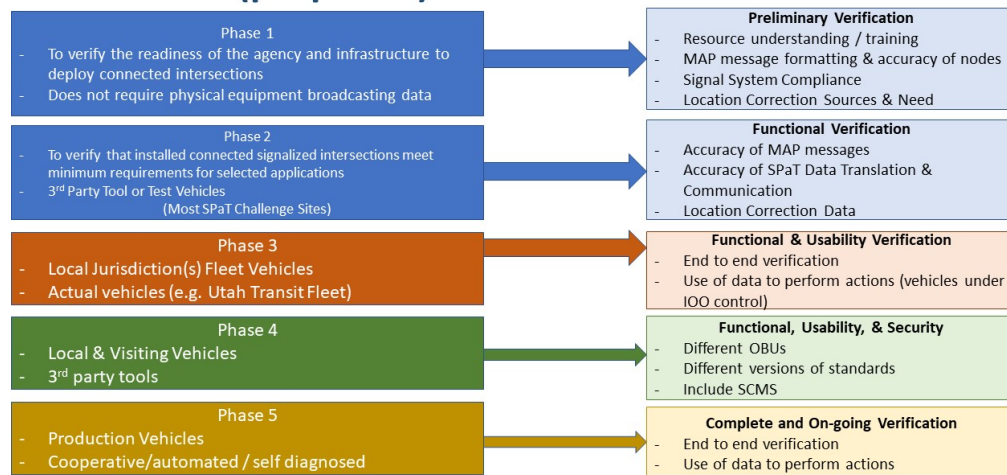
Blaine described that there are several parallel activities led by groups outside the CAT Coalition that will accomplish portions of the activities of the initiative and the CAT Coalition is not responsible for all the activities. The CAT Coalition will collaborate with these other activities to avoid duplication.

Blaine discussed two of the actions during this webinar: #3 Test Approach and #6 Deployment Tracking.

**Action #3 – Test Approach:**

The concept of the test approach activity is to develop an overall approach to IOOs testing and verifying the connected intersection broadcasts of SPaT/MAP/RTCM. Blaine showed the following image to introduce a proposed five phases of testing.

### Connected Intersection Testing Approach (Action #3) (proposed) – Phased Verification



The initial phase of testing is preliminary verification and is something that IOOs can start before any equipment is deployed. The IOO/OEM SPaT/RLVW work group has developed a rough draft of the Phase 1 resource. Blaine invited members to contact Dean if they are interested in reviewing this draft.

**Action #6 – Deployment Tracking:** The goal of Activity #6 is to define the needs for tracking connected intersections and a possible approach to performing this tracking. Blaine introduced this activity by describing that one question is whether a national database that includes all the deployed, tested, operational connected intersections is feasible, practical, and sustainable. Blaine noted that if a national database is needed, additional questions would include:

- Who should own/operate the database?
- Can agencies self-report?
- Are there local tools to self-report in real time?

There was a question regarding whether there was a minimum level of security that needed to be provided. Blaine noted that messages communicated with DSRC or C-V2X are assumed to be secured in an SCMS system which requires certificates. Network security would need to be implemented if data is transferred out of the cabinet through other systems.

## Update from Previous Webinars – Connected Work Zones

Dean reminded the group that at July’s webinar Collin Castle of Michigan DOT highlighted Connected Work Zones and requested participants to download the Work Zone Data Collection (WZDC) Tool that supports the creation of the map data and content needed to define work zones. Dean re-emphasized Collin’s request and encouraged the group to use the tool to learn about connected work zones and to test the tool on work zone configurations. Anyone who has downloaded the tool and has information they can share should contact Dean.

Deb Curtis added that some changes have been made to the tool from the feedback that has already been received so if an agency has used an older version they may want to download the newer version that allows agencies to edit their information. Deb added that a mobile version is also available for android users. The WZDC Tool can be downloaded from the GitHub website at: <https://github.com/TonyEnglish/V2X-manual-data-collection>. There is also a video demonstrating the tool available to watch at [this address](#).

## Partner Reports: USDOT, ITS America, ITE, Other

**USDOT** – Deb Curtis announced that the Work Zone Data Exchange (WZDx) version 3 is being published. They will finish the software changes in October and will update the document in November. The final version should be available in December.

The Connected Intersections project with ITE has conducted a ConOps walk through and will complete a Requirements walk through the second week of December.

**AASHTO** – Tom Kern discussed the AASHTO Committee on Transportation System Operations (CTSO’s) recent annual virtual meeting. Tom noted that the [CTSO](#) working groups have identified a number of action items they will be initiating, many of which might be of interest to this working group.

**ITS America** – Carlos Alban indicated that ITS America has organized a series of new standing committees, including the following:

- |                                 |                                  |
|---------------------------------|----------------------------------|
| - Smart Infrastructure;         | - Sustainability and Resiliency; |
| - Automated Vehicles;           | - Emerging Technologies; and     |
| - V2X/Connected Transportation; | - Mobility on Demand.            |

Carlos noted that there will be opportunities for collaboration with this working group through a variety of efforts of these working groups.

**ITE** – Siva Narla highlighted ITE’s coordination with AASHTO. The next step on the Connected Intersections project is to identify needs and requirements and address red light violation warning. Requirements are expected to be available for comment in November.

The RSU project Requirements walk through has been completed and they are waiting for comments. It is critical that the group coordinate with other groups to determine who is willing and able to implement.

### **Open Discussion on Emerging Topics**

Blaine provided the group with an opportunity to bring up topics that members may want to be aware of or participate in but there was no discussion, likely due to time constraints.

### **Close**

Blaine thanked the members for their participation and urged everyone to support and encourage cross communication.

**The next webinar is scheduled for Thursday, January 28, 2020, at 2 pm Eastern.**

## **TWG 1 October 22, 2020 Webinar Participants**

Blaine Leonard (Chair)	Hideki Hada	Mark Peters
Adam Merchant	Iouri Nemirovski	Marthand Nookala
Alan Clelland	Jacob Folkeringa	Mauricio Guerra
Andy Graham	Jeffrey Bergsten	Mia Silver
Animesh Balse	Jeremy Schroeder	Mike Schagrin
Anjan Rayamajhi	Jesus Ruiz	Pete Hansra
Barbara Staples	Jianming Ma	Rich Deering
Barry Einsig	Jim Frazer	Robert Dingess
Bob Murphy	Jim Harkness	Roxane Mukai
Carlos Alban	Jim Misener	Siva Narla
Christian Kulus	John Abraham	Steve Misgen
Curtis Thompson	Jon Riehl	Steve Sawyer
Darren Capes	Ken Moshi	Susan Catlett
Dave Miller	Ken Yang	Tom Kern
Dean Deeter	Kent Kacir	Tom Timcho
Deborah Curtis	Kyle Connor	Weimin Huang
Eddie Fidler	Lev Pinelis	
Frank Provenzano	Liana Mortazavi	
Gary Strack		