

## V2I Deployment Coalition Monthly Meeting

### Minutes

May 18, 2016 – 11:00-12:30 (Eastern)

#### Actions

1. Faisal Saleem: Work with Steve Lockwood and USDOT to arrange follow-up discussion between TWG 4 and USDOT regarding Deployment Guidance comments. *It was suggested that this discussion take place during the October or November meetings for TWG 4. The action will remain open until USDOT identifies a publication date for the Deployment Guidance.*
2. Faisal Saleem/Ginny Crowson: Following approval by TWG chairs and co-chairs, submit summaries of Issue 6: V2I Outreach and Issue 11: V2I Consumer Messaging to USDOT. *Summaries will be submitted with Tech Memo 4 for the full V2I DC.*
3. Faisal Saleem/Navin Katta/Ginny Crowson: Discuss how TWG 4 can best review and comment on products that will be issued to support V2I Deployment Guidance. *Need to arrange coordination meeting with Jonathan Walker.*
4. Ginny Crowson: Keep in touch with Cliff Heise regarding Iteris work on CVRIA integration with ITS Architecture and explore options for presentation to TWG 4 toward the end of 2016.
5. All: Review con ops excerpts for four priority apps and be prepared to offer additional feedback during 6/8 meeting.
6. All: Contact Steven Bayless with information regarding DSRC deployments and the channels being used so the information may be added to the list ITS America is compiling.
7. Ginny Crowson: Issue meeting notices for monthly meetings through the end of 2016.

#### Attendance

1. Faisal Saleem (Chair)	Maricopa Co., AZ	<a href="mailto:faisalsaleem@mail.maricopa.gov">faisalsaleem@mail.maricopa.gov</a>
2. Navin Katta (Co-Chair)	Savari Inc.	<a href="mailto:navin@savarinetworks.com">navin@savarinetworks.com</a>
3. Gary Piotrowicz	RCOC	<a href="mailto:gpiotrowicz@rcoc.org">gpiotrowicz@rcoc.org</a>
4. Virginia Lingham	MTC (Bay Area)	<a href="mailto:vlingham@mtc.ca.gov">vlingham@mtc.ca.gov</a>
5. Bob Arnold	USDOT FHWA	<a href="mailto:robert.arnold@dot.gov">robert.arnold@dot.gov</a>
6. Stephanie Fischer	USDOT	<a href="mailto:stephanie.fischer@dot.gov">stephanie.fischer@dot.gov</a>
7. Shel Leader	Private Consultant-Telecom	<a href="mailto:shel@sleader.com">shel@sleader.com</a>
8. Naveen Lamba	Grant Thornton	<a href="mailto:naveen.lamba@us.gt.com">naveen.lamba@us.gt.com</a>
9. Daniel Lai	Transpo Group	<a href="mailto:daniel.lai@transpogroup.com">daniel.lai@transpogroup.com</a>
10. Koorosh Olyai	Stantec	<a href="mailto:koorosh.olyai@stantec.com">koorosh.olyai@stantec.com</a>
11. Darryl Dawson	ITS Engineering Ltd.	<a href="mailto:ddawson@itsengineering-ltd.com">ddawson@itsengineering-ltd.com</a>
12. George Webb	Palm Beach Co., FL	<a href="mailto:gwebb@pbcgov.org">gwebb@pbcgov.org</a>
13. Bob Koeberlein	Idaho DOT	<a href="mailto:robert.koeberlein@itd.idaho.gov">robert.koeberlein@itd.idaho.gov</a>
14. Cliff Heise	Iteris	<a href="mailto:cdh@iteris.com">cdh@iteris.com</a>

15. Tim Simodynes	Iowa DOT	<a href="mailto:tim.simodynes@dot.iowa.gov">tim.simodynes@dot.iowa.gov</a>
16. Alan Clelland	Iteris	<a href="mailto:axc@iteris.com">axc@iteris.com</a>
17. Brian Burkhard	Jacobs	<a href="mailto:brian.burkhard@jacobs.com">brian.burkhard@jacobs.com</a>
18. Barry Pekilis	Transport Canada	<a href="mailto:barry.pekilis@tc.gc.ca">barry.pekilis@tc.gc.ca</a>
19. Dean Erickson	Triunity Eng. & Mgmt.	<a href="mailto:dean.erickson@triunityeng.com">dean.erickson@triunityeng.com</a>
20. Scott Shogan	PB	<a href="mailto:shogan@pbworld.com">shogan@pbworld.com</a>
21. Chris Stanley	Iteris	<a href="mailto:stanley@battelle.org">stanley@battelle.org</a>
22. Jim Katsafanas	Michael Baker	<a href="mailto:jkatsafanas@mbakerintl.com">jkatsafanas@mbakerintl.com</a>
23. Matt Volz	HDR	<a href="mailto:matthew.volz@hdrinc.com">matthew.volz@hdrinc.com</a>
24. Samian Kaur	InterDigital	<a href="mailto:samian.kaur@interdigital.com">samian.kaur@interdigital.com</a>
25. Steven Bayless	ITS America	<a href="mailto:sbayless@itsa.org">sbayless@itsa.org</a>
26. Dean Deeter	Athey Creek Consultants	<a href="mailto:deeter@acconsultants.org">deeter@acconsultants.org</a>
27. Ginny Crowson (Liaison)	Athey Creek Consultants	<a href="mailto:crowson@acconsultants.org">crowson@acconsultants.org</a>

### April Meeting Recap

Faisal Saleem provided a recap of the V2I DC Spring 2016 Meeting. He noted that CAMP demos of V2I apps were held at CAMP facility in Fowlerville for V2I DC on April 19. There were vehicle and commercial truck demonstrations of the following V2I applications which used BSM and SPaT:

- Curve speed warning
- Red light violation warning (RLVW)
- Reduced speed zone/reduced speed
- Reduced speed zone/lane closure

All TWGs met in full-day breakout sessions on April 20. The TWG 4 breakout included an introduction to two V2I Deployment Guidance products (Connected Vehicles and the Planning Process, and Near-Term Transition and Planning) and discussion about future Guidance products and pre-deployment guidance for priority applications. TWG 2 joined TWG 4 for afternoon discussions about Issue 7: Understanding the Benefits and Costs of V2I Deployment to identify research needs and content to check for in the Guidance when it is released. TWG 2 and TWG 4 also participated in a V2I deployment focus group led by USDOT contractors to gather feedback on outreach plans. The focus group discussion was related to earlier TWG 4 discussions with USDOT about outreach and education plans in relation to Issue 6: V2I Outreach. Cliff Heise added that the new V2I website being developed through this outreach effort will be available this summer. Bob Arnold also reminded the group that the new Guidance will not negate anything in the old Guidance and he is still hopeful that the new Guidance will be released yet this summer. Faisal continued the April meeting recap by noting that TWG 4 also reviewed remaining and potential future work, which included:

- Review V2I DC Guidance once issued
- Review and support outreach to V2I DC on Guidance products
- Develop further guidance for four priority applications if needed after review of new V2I Deployment Guidance

- Varying operating philosophies for V2I among state and local transportation agencies
- Standards for maintaining roadside infrastructure
- Lessons learned from key deployments such as CV Pilots and Smart Cities

All of the TWGs reported back on breakout sessions to the full Coalition in the morning of April 21. TWG 1 is continuing to work on Federal policy statement and infrastructure maintenance. TWG 2 is continuing to work on the research one-stop-shop. TWG 3 is continuing work on data issues and common V2I deployment goals. TWG 5 is continuing to identify standards gaps especially related to RSU/RSE and after-market.

All of the TWG chairs then reported progress to the Executive Committee in the afternoon of April 21. Chairs highlighted progress from current work plans and presented potential future work. From the discussion, the following items will be further explored by the V2I DC:

- OEM workshop
- National SPaT deployment concept
- Additional methods for providing deployment guidance
- Build understanding of and identify how to address security issues
- Roadmap or deeper guidance for four priority apps
- Maintaining ongoing, broad-based outreach
- Mining projects and proposals for deployment experiences

The Coalition is awaiting feedback from USDOT on the proposed business plan for continuation, and Faisal concluded his meeting recap with a reminder that a V2I DC session will be presented at ITS America on June 14 from 3:30-4:30.

### Discuss Pre-Deployment Guidance

During the April TWG 4 meeting, Jonathan Walker provided an introduction to the pre-deployment guidance for Connected Vehicle applications. Jonathan noted that USDOT will continue developing such guidance and he asked that TWG 4 provide input for the effort.

Dean Deeter joined today's meeting to provide additional background on the development of pre-deployment guidance and to support TWG 4 review of two of guidance for two of the applications. Dean explained that the ENTERPRISE pooled fund developed planning guidance (aka warrants) for 10 ITS applications several years ago. The planning guidance available at: [www.enterprise.prog.org/itswarrants/](http://www.enterprise.prog.org/itswarrants/). USDOT asked ENTERPRISE last year to develop similar, pre-deployment guidance for two CV apps: reduced speed zone warning (RSZW) and advanced traveler information systems (ATIS). Dean explained that the guidance development process started with defining the purpose of the application, noting that sometimes there might be multiple purposes. Then critical factors were identified and these included various conditions that could prompt an application. Next, guidance was developed based on research and identify simple questions that could be asked to help an agency navigate the process of assessing the appropriateness of the applications. Much of the research for this step came from the CVRIA. Finally, the guidance was shared with agencies for peer review and feedback. This led to refinements for the final guidance. The guidance typically includes two levels of questioning to help agencies determine if an app should be deployed at a select location:

- Level 1 questions determine need for installation

- Level 2 questions relate to support system requirements and other considerations

The guidance for RSZW was then reviewed. Brian Burkhard commented that the supporting references used to establish various details in the guidance are very helpful for agencies. Gary Piotrowicz added that the guidance is a good start, particularly in light of the limited real world experience to-date. Shel Leader added that it should be noted if the criteria assume that other methods have been tried. Shel and Brian both added that guidance should include criteria to minimize over broadcasting messages to drivers in a way that could desensitize them to the message.

Curve warning guidance for roadside ITS devices was previously developed by ENTERPRISE during their initial efforts. As the pre-deployment guidance for a V2I application of curve warning was discussed, it was believed that the original guidance could potentially be the same – regardless of whether the curve warning is delivered via roadside ITS devices or a V2I application. Dean briefly reviewed the curve warning guidance, noting this is an application with multiple purposes including use on rural two-lane highway curves, use at high risk locations, and used for truck rollovers on ramps/curves. Faisal Saleem commented that criteria could potential be the same for roadside ITS devices and V2I applications, as well as static signing. The three levels of deployment could simply be seen as an escalation of technology. Cliff Heise added that Iteris is working on an effort to integrate the CVRIA with the national ITS Architecture and the effort has included discussion about when agencies may want to transition from one level of technology to another. Cliff noted that the work will be done by the end of the year and there could be a presentation made to TWG 4 at that time.

TWG 4 will continue the discussion of pre-deployment guidance for the two remaining priority V2I apps – queue warning and intersection (RLVW) at a future meeting. Feedback on all the apps will be summarized and shared with USDOT.

#### DSRC/5.9 GHz Status

Steven Bayless joined the TWG 4 meeting to explain recent activities associated with DSRC. He explained that the NTCA – The Rural Broadband Association recently requested sharing of the 5.9 GHz spectrum and intervention from the White House with the FCC. ITS America led an industry effort to prepare a response letter addressed to the President. There are upcoming FCC notices regarding spectrum sharing and ITS America is aware of two proposals that may be made. It is believed that the cable industry is also trying to delay NHTSA's V2V rulemaking to further delay use of the spectrum for transportation purposes. ITS America's letter requests that the V2V rulemaking be released as soon as possible. ITS America is also gathering information about deployments using DSRC and various channels within the spectrum to make the case that the spectrum is being used for transportation. Steven asked TWG 4 to contact him with information regarding DSRC deployments and the channels being used so the information may be added to the list ITS America is compiling.

#### Next Steps for TWG 4

There was no time remaining for additional comments from the group. Faisal noted that Ginny Crowson will send additional meeting notices for the remainder of 2016 and he reminded the group that the next meeting will be on June 8, from 11:00-12:30 (Eastern).

## TWG 4 Work Plan Summary and Status

<b>V2I Deployment Issues</b>	<b>Anticipated TWG 4 Actions</b>	<b>Anticipated Completion Date</b>
<b>Issue 1: V2X Applications</b>	<ul style="list-style-type: none"> <li>Identify relevant content from this issue that should be included in the overall outreach in Issue 6 based on TWG 3 findings.</li> </ul>	<b>Q1-2016 Underway</b>
<b>Issue 2: Complementary Communications to DSRC</b>	<i>No action planned</i>	
<b>Issue 3: V2I Data</b>	<i>No action planned</i>	
<b>Issue 4: Patents-Intellectual Property</b>	<i>No action planned</i>	
<b>Issue 5: Security</b>	<i>No action planned</i>	
<b>Issue 6: V2I Outreach</b>	<ul style="list-style-type: none"> <li>Provide input to USDOT on V14 of Deployment Guidance.</li> </ul>	<b>6-29-2015 Completed</b>
	<ul style="list-style-type: none"> <li>Identify outreach that may be needed to increase awareness and support of V2I among transportation agencies.</li> </ul>	<b>Q3-2015 Completed and Q2-2016</b>
	<ul style="list-style-type: none"> <li>Provide input to USDOT on additional content for next version of Deployment Guidance.</li> </ul>	<b>Q4-2015</b>
<b>Issue 7: Understanding the Benefits and Costs of V2I Deployment</b>	<ul style="list-style-type: none"> <li>Identify relevant content related to calculating the benefits and costs of V2I applications based on work by TWG 1 that should be included in overall outreach in Issue 6.</li> </ul>	<b>Q2-2016</b>
<b>Issue 8: V2I Standards</b>	<i>No action planned</i>	
<b>Issue 9: Understanding V2I Liability Assignment</b>	<ul style="list-style-type: none"> <li>Identify relevant content related to V2I liability assignment that should be included in overall outreach in Issue 6 based on TWG 2 findings.</li> </ul>	<b>Q2-2016</b>
<b>Issue 10: V2I Synergies with Other Emerging Technologies</b>	<i>No action planned</i>	
<b>Issue 11: V2I Consumer Messaging</b>	<ul style="list-style-type: none"> <li>Develop a description of the type of content and guidelines that are needed to be developed to enable consistent, accurate consumer messaging related to V2I applications.</li> </ul>	<b>Q4-2015 Completed</b>
<b>Issue 12: V2I Multimodal Applications</b>	<i>No action planned</i>	
<b>Issue 13: Infrastructure Processes as V2I Obstacles</b>	<ul style="list-style-type: none"> <li>Identify relevant content related to infrastructure processes based on work completed by TWG 1 and TWG 3 that should be included in overall outreach in Issue 6.</li> </ul>	<b>Q1-2016 Underway</b>
<b>Issue 14: Federal V2I Policy Statement</b>	<ul style="list-style-type: none"> <li>Identify relevant content related to a Federal V2I policy statement based on work done by TWG 1 that should be included in feedback on the V2I Guidance documents.</li> </ul>	<b>Q4-2015 Underway</b>
<b>Issue 15: Maintaining V2I Infrastructure</b>	<i>No action planned</i>	