

Connected Intersections System Design Details Walkthrough

The following are meeting minutes from meeting of the Connected Intersections (CI) Committee System Design Details (SDD) walkthrough, scheduled for Monday March 8, 2021 – Thursday March 11, 2021.

The agenda and chatlog is provided at the end of these minutes.

All times in EST.

The following schedule was followed.

- 3/8-Monday 11:00 AM – 5:00 PM – Traffic Signal Controller/SPaT Details
- 3/9 Tuesday 11:00 AM – 12:30 PM – SPaT Details
- 3/9 Tuesday 3:30 PM – 5:00 PM – Testing and Conformity Details
- 3/10 Wednesday 12:00 PM – 5:00 PM – Security Details
- 3/11 Thursday 11:00 AM – 5:00 PM – Positioning/MAP Details

Roll Call of Committee

As indicated by X, the committee members in attendance were

| Committee Members | Day 1 | Day 2, AM | Day 2, PM | Day 3 | Day 4 |
|--|-------|-----------|-----------|-------|-------|
| Roy Goudy (Co-Chair), Nissan | X | X | X | X | X |
| John Thai (Co-Chair), City of Anaheim | X | X | X | X | X |
| Christina Spindler, Wyoming DOT | X | | X | | X |
| Doug Schimidt, Aptiv | X | | | X | X |
| Douglas Tarico, Q-Free / Intelight (Alternate for Whitney Nottage) | X | X | X | | |
| Ed Seymour, Texas A&M Transportation Institute | X | | | X | X |
| Faisal Saleem, MCDOT | X | X | X | | X |
| Jay Parikh, CAMP | X | X | X | | X |
| Jim Misener, Qualcomm | | | | | X |
| Justin McNew, JMC Rota | X | | | | X |
| Michael Maile | | X | | | X |
| Michael Schragin, McCain | X | X | | | |
| Mike Stelts, Panasonic | X | X | X | | X |
| Mike Shulman, Ford | X | | | | |
| Omar Faruk (Alternate for Raj Ponnaluri) | X | X | | X | |
| Raj Ponnaluri, Florida DOT | | | | X | |
| Ray Starr, Minnesota DOT | X | X | X | X | X |
| Steve Bowles, 360 | X | X | | X | |
| Steve Sprouffske, Kapsch | | | | | X |
| Vivek Vijayakumar, GM | X | X | X | | X |
| Whitney Nottage, Q-Free | | | | | |
| William Whyte, Qualcomm (Alternate for Jim Misener) | | X | X | X | X |

Also in attendance were:

| Attendees | Day 1 | Day 2, AM | Day 2, PM | Day 3 | Day 4 |
|---|--------------|------------------|------------------|--------------|--------------|
| Aaron Moore, OmniAir | X | X | | | |
| AJ Lahri, ConSysTec | X | X | X | X | X |
| Alan Clelland, DKS Associates | X | X | | X | |
| Alan Davis, Georgia DOT | X | X | X | X | |
| Anthony Gasiorowski, WSP | | | | X | X |
| Amir Ibrahim, Michael Baker International | X | | | | |
| April Wire, MCDOT DOT | | X | | | |
| Avery | X | | | | |
| Barry Einsig, Econolite | | | X | | |
| Blaine Leonard, UDOT | | X | X | X | X |
| Brian Simi, CA DOT (Caltrans) | X | | | | |
| Carl Anderson, USDOT | X | | | | |
| Caitlin Yong | | X | | | |
| Clayton Chen, USDOT | X | | X | X | |
| Chuck Felice, UDOT | | X | X | | |
| Craig Hanners, Intsignia | X | X | X | X | X |
| Danyang Tian, Honda | X | | X | X | X |
| David Benevelli, TransCore | X | X | | | |
| Deborah Curtis, USDOT | X | X | X | X | X |
| Douglas Gettman, Kimley Horn | X | | | | X |
| Dustin DeVoe, Econolite | X | | | | |
| Drew Van Duren, Qualcomm | | | | X | |
| Eddie Curtis, USDOT | X | X | | | |
| Ed Fok, USDOT | X | X | X | X | |
| Ed L | | | | X | |
| Frank Perry, WSP | | | X | X | |
| Geoff Knapp, WSP | X | | | | |
| Gregory M. Baumgardner, Battelle Memorial Institute | X | | | | X |
| Guoyuan Wu, University of California | X | X | | X | X |
| Harsh Vipat | | | | X | |
| Hassan Charara, TTI | | X | | | X |
| Haydar Issa, Transport Canada | X | X | | | |
| Iouri Nemirovski, Siemens | | X | | X | |
| Jean Johnson, NEMA | X | X | X | X | X |
| Jeannie Willis, City of Dublin | X | X | X | | X |
| Jesus Ruiz, McCain | | X | | | |
| Jim Alfred, BlackBerry | X | | X | X | X |
| Jimmy Upton, Integrity Security Services | X | X | X | X | X |
| Jingtao Ma, Traffic Technology Services | | | | | X |

| Attendees | Day 1 | Day 2, AM | Day 2, PM | Day 3 | Day 4 |
|--|--------------|------------------|------------------|--------------|--------------|
| Joanna Wadsworth, City of Las Vegas | X | | | | |
| Joe Gorman, Michigan DOT | X | | X | | X |
| John Amidon, Narwhal | | | | | X |
| John Garrett | X | | | | X |
| John Kenney, TNA | X | X | X | X | X |
| Jonathan Parent, Transport Canada | X | | | X | |
| Justin Anderson, Noblis | X | X | X | X | X |
| Kellen Shain, Noblis | X | X | X | X | |
| Kezhen Shen, NEMA | X | | | | |
| Ken Yang, AECOM | X | X | | | X |
| Kevin Balke, TTI | X | X | | | |
| Kevin Chan, Minnesota DOT | X | | | | |
| Kevin Vitta, ITS America | | X | | | |
| Kian Leiner, USDOT | X | | | | |
| Kiel Ova, Traffic Technology Services | | X | | | X |
| Kingsley Azubike, USDOT | X | X | | X | X |
| Linda Nana, Noblis | X | X | X | X | X |
| Mahmood Nesheli | | X | X | X | X |
| Manny Insignares, ConSysTec | | | X | | |
| Mary Lynn Buonarosa | | X | X | | |
| Mateusz Malinowski, Panasonic | | | | | X |
| Matt D'Angelo, Gresham Smith | | X | X | | |
| Matt Junak , HNTB | X | | | | |
| Michael Lockerman , DENSO | X | X | X | X | |
| Michaela Vanderveen, Still Water | | | | X | X |
| Minseok Kim | | X | | | |
| Mohammed Hadi , Florida International University | X | X | X | X | X |
| Nick Hegemier, DriveOhio | X | | | | X |
| Nicola Tavares, ITE | X | X | X | X | X |
| Patrick Chan, ConSysTec | X | X | X | X | X |
| Peter Jager, UDOT | | X | | X | X |
| Purser Sturgeon, Southwest Research Institute | X | X | | | |
| Ralph W. Boaz, Pillar Consulting, Inc. | X | X | X | X | |
| Randal Roebuck, OmniAir | X | | X | | X |
| Robert Rausch, TransCore | X | X | X | X | X |
| Robert Saylor, City of Plano | | X | | | |
| Romina | | X | | | |
| Ryan Bollo | | X | X | | |
| Sai Paruchuru | | X | X | X | X |
| Shah Hussain, Ford Motor Company | X | | | | |
| Shahram Rezaei, Cruise Automations | | X | | | |

| Attendees | Day 1 | Day 2, AM | Day 2, PM | Day 3 | Day 4 |
|--|-------|-----------|-----------|-------|-------|
| Siva Narla, ITE | X | X | X | X | X |
| Steve Novosad, HNTB | X | | | | |
| Steve Sill, USDOT | X | X | X | | |
| Srinivasa Sunkari, TTI | | X | | | |
| Subhadipto Poddar, Clark County Public Works | X | X | X | X | X |
| Suzanne Sloan, USDOT | X | X | | | |
| Thomas Timcho, WSP USA | X | X | X | | |
| Tony Ahmad, RS&H | | X | X | | X |
| Venkat Nallamothu, AASHTO | X | X | | X | X |
| Virginia Lingham, WSP USA | X | | X | | |
| Walton Fehr, Volpe | X | | | | |
| Wolfgang Buckel, Siemens | | | | X | |
| Wei Zhang, USDOT | X | X | | X | |
| Zhitong Huang, Leidos | X | X | | X | |

Day 1

Roy called meeting to order at 11:02 AM

Siva Narla reviewed ITE's anti-trust guidelines.

Roll Call of Committee took place. A quorum was present.

Roy Goudy and John Thai went over the project overview.

Jim Alfred raised concerns about Anti-Trust guidance and normative references. Jean Johnson said any document referenced should be publicly available with no membership required. Siva Narla said anti-trust concerns will be addressed later due to limited time.

USDOT gave opening remarks.

Roy Goudy reviewed walkthrough process. Patrick Chan went over details.

Robert's Rules in order.

Patrick Chan went approach to walkthrough for day 1.

Ralph Boaz discussed Annex A: Connected Intersection Traffic Controller Issues & Recommendations

There was discussion on use of the TSCBM message

- Greg Baumgardner mentioned that is more efficient to have
- NTCIP 1202 requires four different MIB tables to build SPaT message
- Ralph Boaz says NTCIP 1202 elements are needed, even for TSCBM
- Patrick Chan says TSCBM does not currently support "next time", which is a future state.

Patrick Chan began discussing architectural needs.

All notes recorded in Walkthrough workbook.

Patrick Chan discussed requirements and design details for interface between TSC infrastructure and RSU. The design details focused on 3 different message formats - NTCIP 1202 v03A, the TSCBM, and the UPER encoded SAE J2735 message. Noted that the CI document may not be able to achieve interoperability in the document due to resources availability and schedule.

Ralph Boaz reviewed the changes to the operational scenario on Red Light Violation Warning (RLVW).

Patrick Chan reviewed the RLVW support requirements and design details.

Noted that clarification was needed on what values should be sent for each data element of the SPaT message under certain conditions:

- Operating flash during Preemption (only one bit in the DE_IntersectionStatusObject should be asserted - preemption (and not operational flash)
- Priority, fixed time, and non-fixed time if using TSCBM
- when certain bits are asserted in the DE_IntersectionStatusObject, such as when the No MAP Available. If there's no valid MAP, perhaps SPaT should not be broadcasted.

Moved to SPaT Message requirements and design details.

Noted that there was a discrepancy in the latency requirements - The maximum allowable latency between the TSC infrastructure and the RSU; and the maximum allowable latency between a change in signal indication to the SPaT message is received by the OBU/MU are both 200 milliseconds. To be addressed off-line.

Discussion on Road Regulator ID. Final resolution is to be determined by the SAE Technical Committee responsible for SAE J2735, but the SPaT/MAP TF may present temporary guidance.

Discussion on what timing information (e.g., minimum end times) to send in the SPaT message when the TSC infrastructure is under manual control, stop time, or failure flash.

Discussion on failure mode. TCI TF to follow up. What if it's modal (latches)? Note, if the controller is failed, it may not be able to send this bit, so the RSU may have to set this bit.

Discussion on the design for Next Movement State. Noted that the Traffic Controller Issues Task Force and SPaT/MAP TF had different designs for protected/permitted left turns. The TCI TF is to review the SPaT/MAP TF design.

William Whyte discussed summarized some of the security requirements to be imposed on the traffic signal controller infrastructure in the CI Implementation Guide.

Patrick resumed with next movement state requirement and design details.

There was another discussion on TSCBM and it can be used for.

- The NTCIP 1202 working group needs to collect a series of recommendations.
- There was a comment to add details to NTCIP 1218 to support phase/overlap mapping to signal group ID for a TSCBM

Patrick Chan reviewed the requirements and design details for Generic Data needs.

Adjourn 5:09 PM.

Day 2 AM

Reconvened 11:00 AM.

Co-Chairs were not present at start of meeting.

Siva Narla appointed Ray Starr as Pro-Tempore Chair of Committee. There was no objection.

Siva Nara reviewed ITE Anti-Trust Guidance

Roll Call of Committee. A quorum was present.

Patrick Chan resumed with walkthrough of SPaT message requirements and design details. Notes on requirements and design details in Walkthrough Workbook.

Several issues moved to parking lot. Requires more discussions that will be time consuming. Final guidance needs to be published in September 2021.

Completed review of SPaT message and Traffic Signal Controller requirements and design details.

Patrick Chan gave an overview of Annex G: Recommendations to SDOs

Adjourn 12:40 PM.

Day 2 PM

Reconvene 3:30 PM

Siva Nara reviewed ITE Anti-Trust Guidance

A quorum is present.

Patrick Chan began walkthrough of Testing and Conformity Content

Language needs to be revised

Testing is not covering security

Needs to include SCMS/IEEE 1609.2 certification

RTCM test case moved to parking lot

Action: Testing Task Force to revise section

Went over Annex E: Testing Resources

Adjourn 5:18 PM

Day 3

Reconvened at 12:00 PM

Roll Call of Committee

A quorum was not present

Nicola Tavares went over ITE Anti-Trust Guidelines

Jim Alfred raised remaining concerns on Anti-Trust Guidelines

- Issues concerning normative references
- Deb Curtis said comments will be addressed as part of RSU standardization effort. Jim Alfred approves. Co-Chairs approve.

Patrick resumed walkthrough. Notes on requirements and design details in Walkthrough Workbook.

Patrick Chan reviewed Walkthrough Process

Went over Security requirement and design details

Went over Annex C: Security Profiles

Adjourned 5:18 PM

Day 4

Reconvened at 11:00 AM

Roy Goudy went over ITE Anti-Trust Guidance.

Roll Call of Committee. A quorum was present.

Patrick Chan summarized progress to date.

Patrick Chan highlighted issues that had been moved to the parking lot.

Patrick Chan went over plan for day 4.

William Whyte and Michaela Vanderveen discussed security in context of RTCM message and Annex C: Security Profiles

Patrick Chan moved to Walkthrough Workbook. Notes on requirements and design details in Walkthrough Workbook.

Discussion on the Transport Message Size. Justin McNew and Randy Roebuck to provide clarifications for calculating the transport message size.

Discussed positioning requirements and design details.

Agreed that MSM 4 will be used in the RTCM corrections message because it uses a smaller message size while providing the precision needed. Deb Curtis emphasized the Federal Government cannot be seen as endorsing a specific solution, such as GNSS or GLONASS. However, it was agreed that a minimum of 2 constellations will be provided.

Moved on to MAP Message requirement and design details.

Agreed to "parking lot" scaling for computed lanes.

Patrick noted that the SPaT/MAP TF has been coordinating with the CVPFS Map Guidance Document authors for consistency.

SPaT/MAP TF to add discussion on accuracy for vertical curves. For example, dips in elevation should be provided, because it is assumed to be a straight line between nodes, and thus nodes only at the top of dips would not be shown expressed in a MAP message.

Patrick Chan to follow up on linking an egress lane to an ingress lane of a downstream intersection.

Patrick Chan gave another overview of Annex G: Recommendations to SDOs

Action: Task Forces to review requirements and notes in Walkthrough Workbook.

There was a discussion on moving forward.

- Michael Lockerman said some issues uncovered over walkthrough in order for interoperability to be achieved.
- Deb Curtis asked if moving forward as planned is worth it.
- Bob Rausch said it's worth moving forward but question is how much interoperability can be achieved
- John Thai said TSCBM is supposed to sunset and NTCIP 1202v03 is supposed to address. Recommends focusing on NTCIP 1202v03A and to sunset TSCBM.
- NTCIP 1202v03A supersedes TSCBM
- TSCBM is only useful for large deployments such as in Florida.
- Most customers haven't deployed NTCIP 1202v03A yet

Final guidance to be published in September. Second version on parking lot issues is a definite possibility.

Patrick Chan was expecting to distribute updated SDD document by 3/19 for two-week comment period. Will likely be delayed due to issues that need to be resolved by Task Forces.

Deb Curtis and Siva Narla gave closing remarks.

Adjourned 5:13 PM.

Agenda

1. Call to Order
2. Anti-Trust Guidelines & Logistics
3. Roll Call
4. Walkthrough – System Design Details (Continued)
5. Next Steps

Chat Log

Day 1

[11:12 AM] Curtis, Deborah (FHWA) (Guest)

Jim Alfred (Guest) HI Jim, if you could send us a list of the references and documents that concern you, that would be most helpful.

[11:24 AM] Jim Alfred (Guest)

Will send back comments on the RSU spec

[11:27 AM] Curtis, Deborah (FHWA) (Guest)

Thank you Jim. We will get you a response as soon as possible.

[11:29 AM] Jim Alfred (Guest)

I will send comments - again the issue is referencing requirements with IP ownership concerns

[11:56 AM] Schagrin, Mike

Slide 26 - for the 3 SPaT feeds to the RSU, does the RSU handle them the same (i.e., pass thru) or is there different processing required depending on the SPaT source?

[12:00 PM] Craig Hanners

Given that 1202 v3 says that TSCBM is not recommended for new deployments, which I take to mean it is deprecated, why is TSCBM even being given consideration here...shouldn't we be moving off of it rather than encouraging it?

[12:07 PM] Randy Roebuck

Is it needed to update V2X Hub?

[12:11 PM] Baumgardner, Greg (US)

NTCIP 1202 requires walking through like 4 different MIB tables to build the SPaT. One benefit of the TSCBM is that you can get all the data you need in one single transmission. It is, therefore, far more efficient than having multiple polls.

[12:16 PM] Michael Lockerman

A.3.5 nextTime .. TSCBM cannot support?

[12:17 PM] Michael Lockerman

So .. TSCBM does not support RLVW?

[12:19 PM] Curtis, Deborah (FHWA) (Guest)

The V2X Hub is open source. Anyone can recommend/make updates to the code and submit a pull request back to the repo

[12:21 PM] Timcho, Thomas

But can TSCBM be expanded to include nextTime and other required elements. I tend to agree with Greg, but I am biased

[12:26 PM] Michael Lockerman

Re: phase/ovlp to signal group table .. is that in NTCIP 1218?

[12:28 PM] Michael Lockerman

not interoperable?

[12:30 PM] Starr, Ray (DOT)

They are all interoperable between the RSU and the OBU, just not between the TSC and the RSU.

[12:37 PM] Timcho, Thomas

is it really cabinet input?

[12:46 PM] Timcho, Thomas

and when the cause of the cabinet flahs is the TSC, what is the design

[12:47 PM] Fok, Edward (FHWA)

@Tom I think that maybe covered in 3.3.2.2.4 - operational flash?

[12:51 PM] Johnson, Jean (Guest)

If either a or b IS enabled, (singular because a is singular, and b is singular)

[12:58 PM] Michael Lockerman

There is no place in the TSCBM .. to leave empty

[1:25 PM] Ralph Boaz (Guest)

Greg/Tom: The fact that different data elements are defined in different parts of the NTCIP 1202 MIB will be assisted by the filled out Table 8. This will help those implementing it. The V2I Hub ICD, is able to be compact because terms and data elements are understood from NEMA TS 2 and NTCIP 1202. The V2I Hub ICD has very little on explanation.

[1:27 PM] Baumgardner, Greg (US)

I have not seen the v3a of 1202 yet, so I hope you are right. I tried to implement polling NTCIP 1202 v3 against a controller with 128 phases a year or so ago. It did not finish the polling in 0.1 s, making it impractical.

[1:42 PM] Michael Lockerman

might this keep a light green indefinitely?

[1:43 PM] Michael Lockerman

sounds like yes

[1:44 PM] Balke, Kevin

No. The max timer on the controller would force it off.

[1:49 PM] John Thai (Guest)

No, the controller will terminate based on many parameters that prevent the controller from getting "stuck" in a certain phase(s).

[1:59 PM] Michael Lockerman
would yellow ever be shorter than purple?
[2:02 PM] Starr, Ray (DOT)

The yellow is often set to equal the time to traverse stopping distance in the diagram.

[2:03 PM] John Thai (Guest)

Yellow interval in many states is just an indication that a signal is about to turn red.

[2:06 PM] Michael Lockerman
.. "but not if it would exceed maxTime"?

[2:18 PM] Michael Lockerman
should we review table 8?

[2:08 PM] John Thai (Guest)

When the max green timer expires, the controller normally proceeds to end the green interval unless something preempts its normal course of operation.

[2:08 PM] Starr, Ray (DOT)

Unless the minEndTick is already bigger than the AGP.

[2:40 PM] Starr, Ray (DOT)

In table 8 should the column title J2735 SPaT Message instead be title CI guidance, since it cites sections from the CI?

[2:47 PM] William Whyte

valid timeStamp condition should include DE_MinuteOfTheYear as well as DE_Dsecond I think

[2:51 PM] Balke, Kevin

You are correct. These are NOT consistent

[3:51 PM] Starr, Ray (DOT) (Guest)

Also, RLVW is now only addressing through movements, and so the left turn movement may not be as important as knowing the yellow time.

[3:55 PM] Michael Lockerman (Guest)
Do we have 1218 representation here?

[3:55 PM] John Thai (Guest)

Yes we do

[3:55 PM] Michael Lockerman (Guest)

Can I get contacts?

[4:08 PM] Starr, Ray (DOT) (Guest)

Do NEMA TS2 and ASC use DC input changes, or is it a data element on the bus?

[4:09 PM] Douglas Tarico

"DC Input" is a confusing term in this context.

[4:25 PM] Ralph Boaz (Guest)

Justin McNew How much time for the RSU to convert an NTCIP or V2I hub message to J2735 and send it out? What time does it take for the wireless communication to the OBU/MU?

[4:32 PM] Curtis, Deborah (FHWA)

I need to leave now. I'll be back tomorrow. Thanks for all the great work today!

[4:45 PM] Baumgardner, Greg (US)

Why would the message count not change if time was updated? What is the benefit of two messages not being unique?

[4:58 PM] Fok, Edward (FHWA)

there probably needs to be some additional guidance for consistent application of the road regulator ID.

Day 2 Part 1

[11:28 AM] Balke, Kevin

When you are in preemption, you may or may not know timing elements.

[11:28 AM] Balke, Kevin

we should define timing elements depending upon the type of preemption being serviced.

[11:28 AM] Faisal Saleem (DOT) (Guest)

Is guidance needed for connected vehicle co-processor board? It may have been included in the document but thought bring it up just in case.

[11:36 AM] John Thai (Guest)

Kevin - If the Dwell parameter is set for preemption, the controller may just rest in flash (or whatever mode) until preemption actuation is removed.

Siva -- I was responding to John's comment. No need to discuss

[11:41 AM] Michael Lockerman (Guest)

why not?

[11:40 AM] Balke, Kevin

I agree, but can't the controller can be set to cycle through non-preempted phases.? The question is under these situations should be populate the timing elements in the SPaT and is that possible? I think that is something the controller vendors might want discuss to see if that is possible.

[11:58 AM] Balke, Kevin

Green Ball -- make meaning consistent with MUTCD



Mike Lockerman – image

[12:03 PM] Balke, Kevin

But why would through be protected? Doesn't the MUTCD indicate that a green ball is a permissions state (proceed with caution)?

[12:09 PM] Curtis, Deborah (FHWA)

Many of us have a hard stop very soon.

[12:16 PM] Balke, Kevin

minEnd/MaxEndTime -- I think these are discussed in Appendix. Might want to reference Appendix like we did with intersection status data elements.

[12:20 PM] Michael Lockerman (Guest)

Is there an eco-drive TF? Like RLVW?

[12:26 PM] Balke, Kevin

Should the discussion related to NextTime at Ped signal be moved to appendix/annex like other use cases?

Day 2 Part 2

[4:36 PM] Timcho, Thomas

I agree. RLVW profile for J2735

[4:42 PM] Fok, Edward (FHWA)

apparently this is a long day for all...

[4:47 PM] Timcho, Thomas

MAP signing depends on how the site deployed

[4:47 PM] Timcho, Thomas

RSU signing is likely location

Day 3

It looked like the intent for comments on t... by Starr, Ray (DOT) (Guest)

Starr, Ray (DOT) (Guest)

12:05 PM

It looked like the intent for comments on the draft documents was for everyone to edit the same shared spreadsheet.

[12:11 PM] Craig Hanners

What does "camp" stand for?

[12:12 PM] Jimmy Upton (Guest)

[12:13 PM] Starr, Ray (DOT) (Guest)

I don't believe this CI document refers to SCMS manager.

Collision Avoidance Metrics Partnership

[12:32 PM] Guoyuan Wu

Is there any clarification on Ray's question? What is the relationship between this document and SCMS?

[12:33 PM] Fok, Edward (FHWA)

@Bob, how well do you trust your center to field network?

[1:19 PM] William Whyte

It is the responsibility of the CI operator to ensure that their system continues to comply with the security requirements. NOTE: The CI operator should understand that if the system falls out of compliance with the security requirements, then CI devices may no longer be eligible to receive certificates.

• **Ralph Boaz (Guest)**

1:27 PM

ED - We have the following requirement and design (statement).

• We are looking for something we reference. ... by Ralph Boaz (Guest)

Ralph Boaz (Guest) 1:30 PM

We are looking for something we reference. We could had a design requirement to specifically that IOOs have policies, procedures and practices for such and possibly reference NIST (or something else). What do you think?

[1:31 PM] Fok, Edward (FHWA)

ralph, I'm fielding questions in another mtg, I'll get to this in a few minutes.

[1:31 PM] Ralph Boaz (Guest)

No worries.

[1:37 PM] Michaela Vanderveen (Guest)

SCMS Manager is referenced by the RSU standard

[1:50 PM] Fok, Edward (FHWA)

Ralph, some of the standards we've referenced that you can reference in 3.3.4.4.5/4.3.4.4.5 includes: FIPS-199, FIPS-140-2, and NIST SP800-53r4

[2:05 PM] Ralph Boaz (Guest)

Thanks Ed. Looking at what we have to cover today. We will have to look at this offline.

[2:06 PM] Fok, Edward (FHWA)

NP, we can do this over email when ur ready

[2:07 PM] Rausch, Robert (Guest)

I feel you need to provide more guidance into their application than simply directing them to NIST documents.

[2:07 PM] Michael Lockerman (Guest)

What's the TSC equivalent to the "RSU Standard v1.0"?

[2:42 PM] Fok, Edward (FHWA)

"use TLS1.2 (or greater) with SNMPv1 until when devices are able to utilize SNMPv3 or better."

[2:45 PM] William Whyte

If you're interested in participating in the SNMP TSC-RSU conversation please mail me at wwhyte@qti.qualcomm.com -- I'll lose this chat when the meeting ends

[2:45 PM] John Thai (Guest)

Thanks William.

[2:46 PM] Michaela Vanderveen (Guest)

Can we remove DTLS?

[3:11 PM] Blaine Leonard (Guest)

From an IOO perspective, I would like to support the comments that Frank and Jean made. We need an incremental way to get to this goal.

[3:11 PM] Michaela Vanderveen (Guest)

But if that means the devices you buy now will have to be lived with for 20 years, then it doesn't matter how often we can update this ITE guidance

[3:11 PM] Michaela Vanderveen (Guest)

But if that means the devices you buy now will have to be lived with for 20 years, then it doesn't matter how often we can update this ITE guidance

[3:16 PM] Blaine Leonard (Guest)

Michaela's comment is well taken. We need to do some upgrades to get to the desired security level. We can't do it immediately, especially when the hardware isn't even available. There is another challenge here - many agencies may not have the security expertise to understand and implement these requirements today.

Alan Davis-Another IOO perspective: and I don't disagree with Blaine and others, but agencies and the traffic industry in general has been generally weaker on security. I think that it should be taken seriously and the importance of this needs to be communicated (and subsequently standardized). It won't happen overnight, but it is something that needs to be improved.

[3:29 PM] Michaela Vanderveen (Guest)

Summary of discussion based on William: 3:28pm:

These message are for OEM vehicles, so we need to find out from them what they consider acceptable for 1. driver alert and 2. automated.

We should review existing reqs in the light of the fact that it's going to hard to deploy TSC w HSMs.

We should think of a security process that we can put in place to make it possible to deploy these devices.

State that goal is to deploy devices with this level of security.

[3:29 PM] William Whyte

Agree, thanks for the summary

[3:30 PM] Blaine Leonard (Guest)

This was a good discussion, and the summary captures it well. Thanks.

[3:30 PM] Buckel, Wolfgang (SMO NAM RC-US ITS R&D)

Also, HSMs aren't required for TSC for the most part. Only if they want to sign messages on their own. This isn't required for secure TLS connection with an RSU

Maybe we need to make sure the guidance doc... by William Whyte

William Whyte

3:31 PM

Maybe we need to make sure the guidance doc is clear on that point

[3:32 PM] Buckel, Wolfgang (SMO NAM RC-US ITS R&D)

Yes. For sure. Don't want to leave IOOs with the impression that a modern ATC which they have cannot support basic security for CI.

[3:33 PM] Rausch, Robert (Guest)

I think the long term is likely to require a "certification" program for TSC to be "trusted" to create the proper SPAT data - which also implies some sort of "management" or listing of "trusted" devices - - for CI deployment???

[3:34 PM] William Whyte

Right I agree, long term

Now define "long term" - 2022, 2023, I can ... by Rausch, Robert (Guest)

Rausch, Robert (Guest)

3:34 PM

Now define "long term" - 2022, 2023, I can an OEM trust the spat/MAP information without some sort of listing of "trusted" devices?

http://snmp.com/protocol/snmp_rfcs.shtml

[4:48 PM] Fok, Edward (FHWA)

TLS 1.3 should be faster

Day 4

[11:20 AM] Michaela Vanderveen (Guest)

C.3.3

for RTCM security questions by William Whyte

William Whyte

11:30 AM

wwhyte@qti.qualcomm.com for RTCM security questions

[12:50 PM] john amidon - Narwhal (Guest)

the first footnote points to the wrong version of the standard, 10403.2 rather than 10403.3?

[12:51 PM] Baumgardner, Greg (US)

The req. note says the RSU **should** broadcast RTK if it is far from the base station. Is this correct?

[1:58 PM] Sai Paruchuru

Is the scaling supposed to be done after the offset calculations?

[2:07 PM] Jimmy Upton (Guest)

The security issue is that if the MAP message isn't validly signed, then its contents should not be trusted.

[2:07 PM] Rausch, Robert (Guest)

But - it is acceptable to transmit MAP without a SPaT - -

[2:07 PM] Rausch, Robert (Guest)

But - it is acceptable to transmit MAP without a SPaT - -

[2:55 PM] Curtis, Deborah (FHWA)

Highly complex intersections such as those with frontage roads, etc get big, fast.
like 1

[2:55 PM] Davis, Alan

It is a real concern; we have many intersections that exceed the size limits.

[2:56 PM] Fok, Edward (FHWA)

<https://www.google.com/maps/place/Saint+Francis+Wood,+San+Francisco,+CA+94127/@37.7347235,-122.4724246,462m/data=!3m1!1e3!4m5!3m4!1s0x808f7dc05a2fe4e5:0x327ec910df5fa23a!8m2!3d37.7377845!4d-122.4651232>

Saint Francis Wood
San Francisco, CA 94127
[2:57 PM] Davis, Alan

<https://www.google.com/maps/@33.7933757,-84.2901471,465m/data=!3m1!1e3>

Google Maps
Find local businesses, view maps and get driving directions in Google Maps.

[3:44 PM] Curtis, Deborah (FHWA)

The tool is now hosted by NoCOE. We still provide support for anyone wanting to use the tool at
CAVSupportServices@dot.gov

[4:35 PM] Michael Lockerman
Can we review G.3?