NTCIP Testing Workshop Minutes

26 Aug 2024, 1:00 –3:00 EDT  
via Zoom

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| **Facilitator** | Ken Vaughn | Trevilon |
| **Attendees** | Ahnaf Morshed | ITE |
|  | AJ Lahiri | ConSysTec |
|  | Alex Mousadi |  |
|  | Andrew Lehrer | Changeis Inc. |
|  | Ashraf Ahmed | ITE |
|  | Bob Rausch | TransCore |
|  | Brian Scharles |  |
|  | Christopher Poe |  |
|  | David Florence | TTI |
|  | Deborah Curtis | USDOT |
|  | Derek Vollmer | FDOT |
|  | Jani Arvola | Vaisala |
|  | Joe Socci |  |
|  | Jonathan Grant | Yunex Traffic |
|  | Marisa Migliore |  |
|  | Md Ashraf Ahmed |  |
|  | Mike Post | Drive Engineering |
|  | Naresh |  |
|  | Nu Rosenbohm | Consystec |
|  | Patrick Chan |  |
|  | Ralph Boaz | Pillar Consulting |
|  | Randy Roebuck | OmniAir |
|  | Rick Dye | Maryland DOT |
|  | Robert T. White | NDOT |
|  | Roger W. Boettcher | Oregon DOT |
|  | Rose Parisi | Vaisala Inc. |
|  | Shaun Alford |  |
|  | Siva Narla | ITE |
|  | Skye Guo | DDOT |
|  | SMuthu |  |
|  | Sonia Thomas | MDOT |
|  | Subhadipto Poddar | TTI |
|  | Suzanne Sloan |  |
|  | Syed Ahmed |  |
|  | Usman Ali |  |
|  | Viban Gonzales | ConSysTec |
|  | Wajahat Nassar |  |
|  | Yazen |  |
|  | Yazen Aljamal | Caltrans |
|  | Zoami Sosa | City of Colorado Springs |
|  | Zorica Cvijovic |  |

# Call to Order and Introduction

The meeting was called to order.

# Review of NEMA Meeting Guidelines

Ashraf Ahmed presented the ITE anti-trust guidance.

1. **Introductions**

Participants were asked to provide their name and affiliation in their Zoom login. This information was used to create the participants list.

# USDOT and SDO comments

The USDOT and AASHTO, ITE, and NEMA welcomed participants and thanked them for their time.

## State of the Practice

The discussion started with a review of the state of the practice for NTCIP testing so that everyone could have a common understanding of the starting place and lessons learned to date. The key points were identified on Slides 6-7 of the 2024-08-26 presentation.

## Current Challenges

The discussion continued by identifying challenges within the current environment, as indicated on Slides 8-12 of the presentation

## Opportunities

It was pointed out that recent development in AI might facilitate the migration of test procedure information from one format to another (e.g., from code to English or the other way around).

## Questions for the Group

This discussion led to the presentation of 6 key questions for the group as follows:

1. Where should NTCIP test procedures be documented?
2. Where should ISO 26048-1 test procedures be documented?
3. How should test procedures be maintained?
4. What format/language should be used to document procedures?
5. How detailed should test procedures be?
   1. Dialog vs functional
   2. Extent of negative testing
   3. Level of testing needed (e.g., for acceptance or for security certificate)
   4. How often should software be re-tested\*
6. What tools are necessary to achieve objectives?

\*This item was added based on the groups feedback.

## Where should NTCIP test procedures be documented?

The group began by considering where test procedures should be documented (e.g., in Annex C as per the status quo or somewhere else). The group agreed that:

* There was a need for industry-wide test procedures: Even some of the agencies that only test against their own software or central system agreed that we should have standard test procedures that can be properly maintained.
* The full content from Annex C should be moved to some sort of version control system that would assist in identifying changes made between versions.
* The documentation could be made more modular (e.g., each test procedure could be stored in its own file) as long as there was a way to refer to the entire set of documentation as a specific release. There was a desire to be able to produce a composite final document (e.g., versioned PDF) that could be easily referenced.
* Annex C should be replaced by a reference to the external source.
* The test procedures needed to be associated with a change control and approval process that might be different from the current NTCIP ballot process. In particular, the test procedures should perhaps be reviewed and approved by stakeholders that are closer to the details of the testing process rather than through the normal ballot process used by the NTCIP 1200 series standards.
* There was no strong feeling at present whether the industry needed access to interim versions of the document.
* The question was raised that If open source were used and someone did some editing and someone else used it, how would approval work to certify edits? In GitHub, there are processes for making changes where it still does not change the main branch of the tree; rather, a requested change can—once approved—be merged into the main branch. There are a limited number of people allowed to elevate a branch from a developmental to an approved branch, positioning GitHub as a potential consideration. Interestingly, although GitHub does not manage pdfs or word docs as well, it is particularly good at handling text documents and version control.
* A question was also asked about the risks of open-source vs. more traditional development techniques. The open-source environment might result in misunderstandings between what is a current work in progress versus the latest approved release. If an open source environment is used, it will need to have documentation to explain the process and where the current approved versions are. On the up-side, an open environment can lead to better collaborative efforts in identifying bugs in the procedures.
* It was noted that if the development site is open to the public (i.e. for viewing), most tools (e.g., GitHub) offer a free account; if the development is private, there would be a fee fort the account.

## Where should ISO 26048-1 test procedures be documented?

The group agreed that the test procedures for global objects (i.e., ISO 26048-1) should be documented using the same approach for the NTCIP test procedures. There is no reason to have this under a separate ISO facility and doing so runs the risk that the final result might be placed behind a paywall.

# Date and Time of Next Meetings

Ken indicated that the discussion of the remaining questions would continue at the next meeting scheduled for 5 September. We expect to hold an in-person meeting by the end of the year.

# Adjournment

The meeting was adjourned.

# Prepared by,

Kenneth Vaughn

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