

American Association of State Highway and Transportation Officials (AASHTO)
Institute of Transportation Engineers (ITE)
National Electrical Manufacturers Association (NEMA)

Project Management Plan v1.00

NTCIP 1202 Actuated Signal Controllers

Version 4

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PMP in support of: Task Order No. HOIT220173PR

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1 PURPOSE OF THE PROJECT MANAGEMENT PLAN

This document defines a Project Management Plan (PMP) for the NTCIP 1202 Actuated Signal Controllers Version 4 (NTCIP 1202 v04) Project, under the United States Department of Transportation (USDOT) Task Order No. HOIT220173PR, awarded to the Institute of Transportation Engineers (ITE). This PMP establishes a common understanding of the management of the project for:

- a) The USDOT Intelligent Transportation Systems (ITS) Joint Program Office (JPO) who is sponsoring the work;
- b) The Standard Development Organizations (SDOs) overseeing the development, specifically ITE, American Association of State Transportation and Highway Officials (AASHTO), and the National Electrical Manufacturers Association (NEMA);
- c) The consulting team contracted to perform the work; and
- d) The consultants, manufacturers, and public transportation professionals who participate in the Actuated Signal Controllers (ASC) Working Group which will use the deliverable items specified in this PMP.

This PMP conforms to the Project Management Plan Template found in the Task Order Proposal Request (TOPR) for other similar ITS Standards Development projects. It includes plans for scope management, communications, deliverables and milestones, quality management, and human resource management. Portions of this PMP may be updated during the course of the project if the management team or the USDOT determines that modification would significantly facilitate the project management functions. The PMP is not intended to be a progress tracking tool or to be modified for minor changes in schedule once the project has started.

1.1 Background of Project

USDOT and ITE have worked on ITS Standards since the inception of the ITS Standards Program over 20 years ago. This project includes the steps necessary to publish a “The National Transportation Communications for ITS Protocol (NTCIP) 1202 version 4”, hereinafter referred to as NTCIP 1202 v04, under the purview of ITE. The current version of NTCIP 1202 is version 3 (NTCIP 1202 v03), which incorporated new user needs, requirements, and design elements to better enable ASC to Roadside Unit (RSU) communications. Subsequently the Connected Intersections standardization project developed detailed guidance for interoperable deployments of connected intersections which include an ASC and RSU. Part of that effort identified new signal, phase, and timing (SPaT) concepts, such as the Assured Green Period (AGP), which need to be formally added to NTCIP 1202.

NTCIP 1202 v04 is to incorporate new and updated user needs, requirements and design elements resulting from the Connected Intersections standardization effort, results from the City of Anaheim NTCIP 1202 testing project, recommended changes from NTCIP 9014 Infrastructure Standards Security Assessment (ISSA) and other infrastructure owner operator (IOO) and vendor comments and suggestions. NTCIP 1202 version 4 will provide the ITS Community with a complete and correct standard that has been through a systems engineering process and supports full nationwide interoperability for ASCs.

The NTCIP standards are jointly published by AASHTO, NEMA, and ITE, as per these associations' existing agreement. ITE will involve SAE International to develop and publish this standard.

Under this task order, the ITE will:

- Provide project management of all tasks described in the Performance Work Statement (PWS) for Task Order No. HOIT220173PR, 1202 Actuated Signal Controllers Version 4.
- Identify and engage the services of a qualified ITS system engineer(s) and qualified technical editor.
- Identify and engage appropriate stakeholders in the standard development and publication process.
- Develop an NTCIP 1202 v04 Concept of Operations (ConOps) draft, including detailed use cases and user needs, culminating in a ConOps walkthrough.

- Develop an NTCIP 1202 v04 Software Requirements Specifications (SRS) draft, including detailed requirements and full user need to requirements traceability, culminating in an SRS walkthrough.
- Develop an NTCIP 1202 v04 Standard System Design Details (SDD) draft, including detailed design dialogs, messages and data elements with full user need to requirements to design traceability, culminating in a SDD walkthrough.
- Publish the new NTCIP 1202 v04 Standard that has achieved consensus in accordance with the SDOs approval processes.

1.2 Objective

The primary objective of this task order is to publish a non-proprietary, industry-based consensus standard for object definitions in ASCs. The final output will be a published standard that supports center-to-field communications to support connected vehicle technology, updated, secure communication protocols such as SNMPv3, and to include resources for testing ASCs and their compliance with the standard.

1.3 Purpose of the Scope Management Plan

This Scope Management Plan establishes the scope management approach and processes as they pertain to scope description, verification and control measures. It establishes the processes which ensure that the NTCIP 1202 v04 Project includes all of the work required to complete the project while excluding all work that is unnecessary.

2 SCOPE STATEMENT

2.1.1 Project Scope Description

The subsections below describe the project activities listed in the Gantt Chart in Section 4.3, Project Schedule. The project follows a systems engineering process and explicitly incorporates layers of review and modification of the deliverable documents corresponding to the NTCIP Standards consensus process. Each of the major project tasks are listed below with the objectives, approach and deliverables identified. Specific TOPR tasks are identified in brackets (i.e. [TOPR Task #]). Specific TOPR deliverables are identified as such (i.e. [TOPR Deliverable]).

2.1.1.1 Task 1 Project Management [TOPR Task 1]

Objective

The ITE project team will provide project management for all tasks described in this PMP and the TOPR.

2.1.1.1.1 Task 1.1 Monthly Progress Report [TOPR Task 1.1]

Approach

The ITE project team will participate in a “kick-off” meeting with the USDOT and its representatives to ensure that all parties have a clear understanding of the requirements of the Performance Work Statement (PWS) and the USDOT’s expectations for the project. The kick-off meeting will take place within 45 working days of the Task Order Award Date.

ITE will provide monthly progress reports. Each monthly progress report will include:

- Monthly Status Reports – In accordance with the IDIQ Contract Section C.4.10.1.
- Project Schedule – In accordance with the IDIQ Contract Section C.4.10.1.
- Risk Register – In accordance with the IDIQ Contract Section C.4.10.1.

ITE will also submit invoices according to the specified monthly period addressing work completed and hours expended. ITE will submit invoices in accordance with the invoice guidance and billing Instructions.

ITE will also attend progress meetings with USDOT. The Task Order Contracting Officer's Representative (TOCOR), and other USDOT personnel, as appropriate, may meet periodically with ITE to review ITE's performance of this PWS. At these meetings, the Contracting Officer (CO) will apprise ITE of how the government views ITE's performance and the ITE will apprise the TOCOR and CO of any problems being experienced. Appropriate action will be taken to resolve outstanding issues.

Deliverables

- Progress Reports [TOPR Deliverable]
- Invoice Reporting
- Progress Meetings

2.1.1.1.2 Task 1.2 Project Management Plan (PMP) and Systems Engineering Management Plan (SEMP) [TOPR Task 1.2]

Objective

Develop a Project Management Plan (PMP) and Systems Engineering Management Plan (SEMP) for the NTCIP 1202 v04 Project.

2.1.1.1.3 Task 1.2.1 Project Management Plan (PMP) [TOPR Task 1.2]

Approach

ITE will provide a PMP based on Technical Exhibit 4, Project Management Plan Template in the PWS, and modified as needed. The PMP will also provide a detailed project schedule in Microsoft Project format, listing all milestones and project management activities. The project schedule will be delivered a minimum of 10 working days prior to the kick-off meeting.

The PMP describes the overall approach to managing the efforts described in this SOW, and coordinating the work performed by all team members. The PMP will contain the following:

- **Scope Management Plan.** Describes the tasks to be performed and the approach to performing these tasks.
- **Team Management Plan.** Describes the overall structure of the project team, explain the roles and responsibilities of all key individuals, and describe the reporting relationships among the Project Management Team and the Consultant Team, collectively known as the "Project Team". The Team Management Plan will include the resumes of all key personnel, representing domain experts and a qualified technical editor. The Team Management Plan and team members are subject to USDOT approval as part of the overall approval of the PMP.
- **Quality Management Plan.** Describes the quality management efforts and how it will ensure that the documents submitted as deliverables herein, will:
 - contain suitable material for the target audience
 - be organized in presentation
 - contain proper word use and English diction
 - contain detailed illustrations
 - be comprehensive, complete and correct
 - be edited for grammatical and editorial errors

The Quality Management Plan is subject to USDOT approval as part of the overall approval of the PMP.

- **Communications Management Plan.** Describes how ITE will coordinate their efforts with the USDOT, particularly the TOCOR and the CO. The Communications Management Plan will also describe how ITE will work with SAE International to develop and review all major sections of the standard.

- **Detailed Project Schedule.** ITE will prepare a detailed project schedule, in Microsoft Project, that lists all of the planned tasks and milestones for the project. The Project Schedule will address all project management and project engineering management activities. The detailed project schedule will reflect a work breakdown structure (WBS) comprised of at least three levels. A pdf version of the schedule will be included in the PMP. ITE will provide an updated Project Schedule, reflecting actual work performed, with every Monthly Progress Report that it submits. The monthly updated Project Schedule will reflect both the base lined task start and end dates and the actual start and end dates for each task in the Project Schedule. The project schedule will be provided in both Microsoft Project and Adobe Acrobat format backwards compatible to Adobe Acrobat version 6.0.

Deliverables

- Draft PMP [TOPR Deliverable]
- Final PMP [TOPR Deliverable]

2.1.1.1.4 Task 1.2.2 Systems Engineering Management Plan (SEMP) [TOPR Task 1.2]

Approach

ITE will develop a SEMP, using IEEE Std. 1220-2005 as guidance. The SEMP will contain the following:

- **Configuration Management Plan.** Identifies an initial set of outputs that will form a baseline and defines the process for managing the configuration of the baseline outputs.
- **Verification and Validation Plan.** Defines the procedures on how the outputs of this project will be checked to confirm the document is complete and correct, and satisfies the needs identified.
- **Risk Management Plan.** Documents risks that might affect the project and the characteristics of the risk. Types of risks that must be considered include risks potentially impacting: technical, project schedule, scope, and costs. A Risk Management Log will be maintained on an on-going basis during the entire period of performance to track risks, mitigation plans, and status. Each risk will have a unique number, probability of occurrence and impact of occurrence rating.

ITE may revise the approved version of the PMP, SEMP, and schedule only with pre-approval from the TOCOR and CO and will deliver, to the TOCOR and CO, any modified version within 10 working days after receiving TOCOR and CO approval.

Once the draft PMP, SEMP, and schedule are ready for review, ITE will schedule a kick-off meeting with the USDOT and its representatives to review each document and ensure that all parties are in agreement on the overall approach to project execution.

ITE will place the revised version of each contract deliverable (including the detailed project schedule) under document configuration control, with version numbers assigned to each document. All documents submitted to, and approved by, USDOT will be assigned a unique version number.

Authorization to proceed to the remaining tasks is pursuant to the TOCOR's written approval of the PMP and SEMP.

Deliverables

- Draft SEMP
- Final SEMP [TOPR Deliverable]

2.1.1.1.2 Task 2 Develop the NTCIP 1202 Concept of Operations (ConOps) Update [TOPR Task 2]

Objective

ITE will develop new Concept of Operations update, featuring new and updated user needs for NTCIP 1202 v04.

2.1.1.2.1 Task 2.1 Review Relevant and Prior and Ongoing Research [TOPR Task 2.1]

Approach

ITE will review new findings from the CTI 4501 Connected Intersections Implementation Guide, the City of Anaheim NTCIP 1202 Testing, NTCIP 9014, and comments submitted to the ASC Working Group. ITE will also develop a questionnaire and interview key stakeholders to determine what user needs may be needed for the standard. The interview findings will be reported to USDOT.

Deliverables

- Stakeholder and SME List [TOPR Deliverable]
- Draft Questionnaire [TOPR Deliverable]
- Final Questionnaire [TOPR Deliverable]
- Stakeholder Interview and Questionnaire Report [TOPR Deliverable]

2.1.1.2.2 Task 2.2 Develop Draft Concept of Operations [TOPR Task 2.2]

Approach

ITE will develop a draft Concept of Operations (ConOps) update for NTCIP 1202. IEEE Std. 1362-1998 is the document that shall be used for guidance in this area. The Contractor shall use the existing outline for the NTCIP 1202 update and ensure new content is consistent with NTCIP 8002 Annex B1. This will consist of new and modified user needs to NTCIP 1202.

Deliverables

- Draft ConOps [TOPR Deliverable]

2.1.1.2.3 Task 2.3 Walkthrough on Draft Concept of Operations [TOPR Task 2.3]

Approach

ITE will convene the ASC Working Group to review the developed draft ConOps. Subject Matter Experts (SMES) comprised of stakeholders (USDOT, State and local transportation agencies, center-to-field experts and car manufacturers; telecommunications, and transportations service industry; public sector representatives, and relevant other Standards Development Organizations and/or working groups) will be invited in consultation with the TOCOR. ITE will arrange for the Walkthrough to take place virtually using the Microsoft Teams Platform.

Before the walkthrough, ITE will prepare a walkthrough plan based on IEEE Std. 1028-1997 and implement the walkthrough plan once approved by USDOT.

The ConOps walkthrough is estimated to require approximately two full days. During the walkthrough, a walkthrough workbook will be developed and revised and edited with stakeholder's comments in real-time during the walkthrough. ITE will deliver a 'Walkthrough Comment Resolution' report which details each walkthrough comment and the Team's recommended resolution.

Deliverables

- Subject Matter Experts [TOPR Deliverable]
- Draft ConOps Walkthrough Plan [TOPR Deliverable]
- Final ConOps Walkthrough Plan [TOPR Deliverable]
- ConOps Walkthrough Workbook [TOPR Deliverable]
- ConOps Walkthrough Resolution Report [TOPR Deliverable]

2.1.1.2.4 Task 2.4 Final Updated Concept of Operations [TOPR Task 2.4]

Approach

ITE revise the Draft ConOps incorporating the TOCOR approved resolutions to the walkthrough comments. This will be the Final ConOps and it will be considered “living” as user needs may be modified as needed as the project continues. ITE will follow the document configuration control specified in the PWS.

Deliverables

- Final Updated ConOps [TOPR Deliverable]

2.1.1.3 Task 3: Develop Software Requirements Specification Update [TOPR Task 3]

Objective

ITE will develop a Software Requirements Specification (SRS) update with new and updated requirements for NTCIP 1202 v04.

2.1.1.3.1 Task 3.1: Develop Draft Software Requirements Specification [TOPR Task 3.1]

Approach

ITE will develop an SRS update based on the ConOps and incorporating any recommended updates from NTCIP 9014 following the guidance of NTCIP 8002 Annex B-1 and IEEE Std. 1362-1998. The Draft SRS will contain a Protocol Requirements List (PRL) that is conformant to NTCIP 8002 Annex B1, tracing each requirement to a user need in the ConOps.

Deliverables

- Draft SRS [TOPR Deliverable]

2.1.1.3.2 Task 3.2: Walkthrough on Draft Software Requirements Specification [TOPR Task 3.2]

Approach

ITE will convene the ASC Working Group to review the developed draft SRS. In consultation with the TOCOR, ITE will prepare a list of knowledgeable SMEs comprised of stakeholders (USDOT, State and local transportation agencies; center to field experts) and contractors involved with SPaT research; traffic signal controller industry representatives and industry suppliers; telecommunications, and transportations service industry; public sector representatives, the connected vehicle program, and relevant other Standards Development Organizations and/or working groups) to invite to attend the walkthrough. The SMEs will provide comments on the requirements from a functional, technical, management and implementation perspective.

In consultation with the TOCOR, the ITE will arrange for a time and facility where the walkthrough will take place. ITE will be responsible for invitations, distributing advance material including the current ConOps, draft SRS, registrations, note taking, and coordination of the walkthrough. ITE will also allow stakeholders to participate in the Walkthrough virtually using the Microsoft Teams Platform.

Before the walkthrough, ITE will prepare a walkthrough plan based on IEEE Std. 1028-1997 and implement the walkthrough plan once approved by USDOT. The walkthrough plan will be provided to USDOT for approval at least 30 days prior to the scheduled walkthrough.

As part of this task, the ITE will deliver an SRS Walkthrough Comment Resolution Report which details each walkthrough comment and the ITE's recommended resolution within 10 working days after the completion of the SRS Walkthrough.

Deliverables

- SME list [TOPR Deliverable]
- SRS Walkthrough Plan [TOPR Deliverable]
- SRS Walkthrough Comment Resolution Report [TOPR Deliverable]

2.1.1.3.3 Task 3.3: Final Software Requirements Specification [TOPR Task 3.3]

Approach

ITE will revise the Draft SRS incorporating USDOT approved resolutions to the walkthrough comments. This will be the Final SRS and it will be considered "living" as requirements may be modified as needed as the project continues. ITE will follow the document configuration control specified in the PWS.

Deliverables

- Final Updated SRS [TOPR Deliverable]

2.1.1.4 Task 4: Develop System Design Description Update [TOPR Task 4]

Objective

ITE will develop new System Design Description (SDD) update based on the ConOps and SRS NTCIP 1202 v04.

2.1.1.4.1 Task 4.1: Draft System Design Description [TOPR Task 4.1]

Approach

ITE will develop a System Design Description (SDD) document based on the ConOps and SRS, and any recommended updated from NTCIP 9014. IEEE Std. 1016-1998 is the document that will be used for guidance in this area. ITE will document the design solution for each requirement developed in the previous tasks. The SDD will specify the content, constraints on formats, timing, and other factors needed.

The SDD will include a Requirements Traceability Matrix (RTM). The RTM is a table that provides a mapping from each requirement to its associated design content. The RTM will be conformant with NTCIP 8002 Annex B1. The SDD will also include new objects describing the data to be stored and dialogs describing how object data may be shared.

ITE will conduct verification and validation checks as per the SEMP and use the USDOT Standards Verification Tool (SVT) to perform an NTCIP 8002 Annex B1 conformance check and verify traceability between the requirements and the design content prior to releasing the draft document for review for the SDD Walkthrough defined in the next task.

Deliverables

- Draft SDD [TOPR Deliverable]

2.1.1.4.2 Task 4.2: Walkthrough on Draft System Design Description [TOPR Task 4.2]

Approach

ITE will convene the ASC Working Group to review the developed draft SDD. In consultation with the TOCOR, ITE will prepare a list of knowledgeable SMEs comprised of stakeholders (USDOT, State and local transportation agencies; center to field experts) and contractors involved with SPaT research; traffic signal controller industry representatives and industry suppliers; telecommunications, and transportations service industry; public sector representatives, the connected vehicle program, and relevant other Standards Development Organizations and/or working groups) to invite to attend the walkthrough. The SMEs will provide comments on the requirements from a functional, technical, management and implementation perspective. The SMEs will also provide comments on the design from a functional, technical, management and implementation perspective.

In consultation with the TOCOR, the ITE will arrange for a time and facility where the walkthrough will take place. ITE will be responsible for invitations, distributing advance material including the current ConOps, draft SRS, registrations, note taking, and coordination of the walkthrough. ITE will also allow stakeholders to participate in the Walkthrough virtually using the Microsoft Teams Platform.

IEEE Std. 1028-1997 is the document that will be used for guidance in planning the walkthrough. A SDD Walkthrough Plan will be prepared and provided to USDOT for approval at least 30 days prior to the scheduled walkthrough. As part of this task, the ITE will deliver a SDD Walkthrough Comment Resolution Report which details each walkthrough comment and the ITE's recommended resolution within 10 working days of the completion of the SDD Walkthrough.

Deliverables

- SME List [TOPR Deliverable]
- SDD Walkthrough Plan [TOPR Deliverable]
- SDD Walkthrough Comment Resolution Report [TOPR Deliverable]

2.1.1.4.3 Task 4.3: Final System Design Description [TOPR Task 4.3]

Approach

ITE will revise the Draft SDD incorporating TOCOR approved resolutions to the walkthrough comments. This will be the Final SDD and it will be considered "living" as details may be modified as needed as the project continues. ITE will follow the document configuration control specified in the PWS.

Deliverables

- Final SDD [TOPR Deliverable]

2.1.1.5 Task 5: Develop NTCIP 1202 Test Procedures [TOPR Task 5]

Objective

ITE will add new test procedures for Annex C of NTCIP 1202 v04

Approach

The test plans, test cases, and test procedures from the City of Anaheim NTCIP 1202 testing effort will serve as the baseline test procedures for NTCIP 1202 v04. ITE will review the baseline test procedures and modify them as appropriate. ITE will also develop new test procedures for new mandatory NTCIP 1202 requirements that are not covered by the baseline test procedures. ITE will update the RTM with Test Procedure traceability and also ensure that all test procedures follow the formats and conventions in NTCIP 8002 Annex B1.

ITE will distribute the Draft NTCIP 1202 Test Procedures to the ASC working group and USDOT for comment, providing a minimum of 20 working days for review and comment. After receiving comments, ITE convene the ASC working group to adjudicate all the comments. ITE will arrange for the meeting to take place virtually using the Microsoft Teams Platform. Following the meeting, ITE will revise the Draft NTCIP 1202 Test Procedures incorporating recommendations from the ASC Working Group. These will be the Final NTCIP 1202 Test Procedures for Annex C of NTCIP 1202 v04.

Deliverables

- Draft NTCIP 1202 Test Procedures [TOPR Deliverable]
- Final NTCIP 1202 Test Procedures [TOPR Deliverable]

2.1.1.6 Task 6 Draft and Final NTCIP 1202 v04 [TOPR Task 6]

Objective

ITE will develop NTCIP 1202 v04 containing the Systems Engineering content developed throughout the project for User Comment Draft and Ballot reviews and acceptance. ITE will publish the NTCIP 1202 v04 standard after acceptance.

2.1.1.6.1 Task 6.1: Draft NTCIP 1202 v04 [TOPR Task 6.1]

Approach

ITE will develop a NTCIP 1202 v04 proposed User Comment Draft (pUCD) containing the Systems Engineering content developed throughout the project. NTCIP 1202 v04 will be based on the ConOps, SRS, SDD, and Test Procedures developed herein, and contain and PRL and an RTM. ITE will circulate a draft NTCIP 1202 v04 pUCD to the ASC Working Group for comment.

Following approval from the ASC Working Group, ITE will prepare a draft User Comment Draft (UCD) draft for approval of the NTCIP Joint Committee. The Contractor shall have a technical editor review the document prior to release of the draft of NTCIP 1202 v04 to the NTCIP Joint Committee. ITE generate a MIB from the UCD version of the standard that will compile correctly and report on the complier results as part of the UCD process. Multiple compliers will be used to verify the MIB. ITE will deliver a draft version of the NTCIP 1202 v04 to the NTCIP Joint Committee and USDOT as part of the UCD review.

The NTCIP Joint Committee will then vote to approve or reject the draft UCD. If the draft UCD is rejected, ITE will work to resolve comments from the NTCIP Joint Committee until it is approved. Following approval from the NTCIP Joint Committee, the UCD will be released for review and comment.

Figure 1 illustrates how the Standard will be developed, approved, and published.

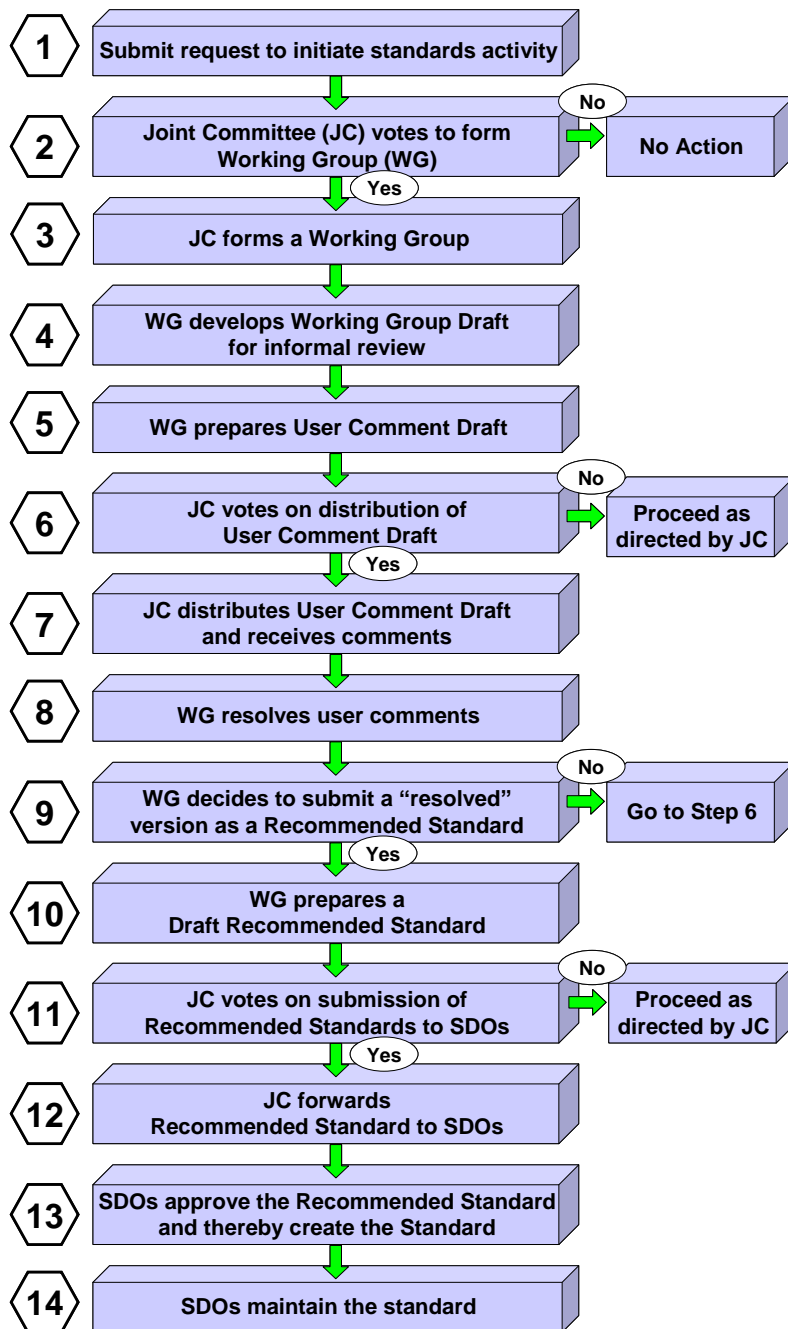


Figure 1 Consensus Process used by the NTCIP Standards

Deliverables

- NTCIP 1202 v04 pUCD [TOPR Deliverable]
- NTCIP 1202 v04 UCD [TOPR Deliverable]

2.1.1.6.2 Task 6.2: Ballot and Final NTCIP 1202 v04 [TOPR Task 6.2]

Approach

Upon completion of the UCD Review and Comment Period, ITE will resolve any comments as approved by the TOCOR. ITE will then develop a proposed Ballot Ready Standard to submit to the NTCIP Joint Committee for ballot. ITE will support comment resolution and updates of the Ballot version of the standard until all ballot comments have been resolved to the satisfaction of the SDOs and TOCOR. A UCD Comment Resolution Tracking Report will be submitted to USDOT.

Once the NTCIP Joint Committee approves the proposed Ballot Ready Standard, it will be subject to approval from the different SDOs that contributed the development of the standard. This process is expected to take 40 days. ITE will resolve any comments from the SDOs.

ITE will prepare the publication ready final NTCIP 1202 v04 standard publish it once all SDOs have approved it. As part of the publication process, ITE will update and recompile the MIB for the approved version of the NTCIP 1202 v04 standard. ITE will report on the complier results as part of the publication process. The final MIB will be delivered with the final NTCIP 1202 v04.

Deliverables

- UCD Comment Resolution Tracking Report [TOPR Deliverable]
- Proposed Ballot Ready Standard [TOPR Deliverable]
- NTCIP 1202 v04 Standard MIB [TOPR Deliverable]

2.1.2 Performance Requirements Summary

The ITE service requirements are summarized into performance objectives that relate directly to mission essential items. The performance threshold briefly describes the minimum acceptable levels of service required for each requirement. These thresholds are critical to mission success.

Table 1. Performance Requirements Summary

Performance Objective	Performance Standard	Performance Threshold	Method of Surveillance
PRS # 1 ITE will provide a published NTCIP 1202 v04 for no-cost distribution via the web [Task 6]	ITE provided the standard via no cost distribution that followed the PWS guidance, contained the required sections, delivered on time.	Zero deviation from standard and no grammatical/spelling errors.	100%, TOCOR will review upon receipt.

2.1.3 Project Exclusions

No exclusions have been identified.

2.1.4 Project Constraints

The following constraints have been established for the NTCIP 1202 v04 Project:

- a) The project schedule end date is February 15, 2024.
- b) Capital expenditures are contractually limited and must be preapproved by ITE.
- c) Project travel costs are contractually limited and must be preapproved by ITE.

2.1.5 Project Assumptions

The following assumptions are being made for the NTCIP 1202 v04 Standard Project:

- a) Additional teleconferences will be used as needed to meet the project goals.

- b) Time has been built into many of the tasks due to the need for ASC WG and USDOT reviews.
- c) ITS JPO will have a representative participating in the ASC WG as a non-voting member.
- d) Documents produced for this project are to be suitable for their defined purpose as determined by the ASC WG.
- e) Throughout the project, there will be various versions of the project schedule produced to take advantage of economies discovered or to account for anomalies unforeseen. As long as there is no change in scope, this PMP does not need to be modified.

2.2 Scope Verification

The scope description found in Section 2 has been developed using the scope provided in the TOPR / PWS ensuring that all tasks and deliverables identified in the TOPR are included in this PMP. Project tasks in the scope description are mapped to TOPR tasks using the form “[TOPR Task].” Deliverable items in the scope description are mapped to TOPR deliverables using the form “[TOPR Deliverable].” Acceptance of this PMP by the ITS JPO verifies the initial scope of the NTCIP 1202 v04 Project.

It is the responsibility of the Project Manager to verify interim project deliverables against the scope as defined in the scope description (see Section 2.1.1). If there is a proposed change of scope (see Section 2.3), ITS JPO must formally accept the change prior to its incorporation into the project.

2.3 Scope Control

The Project Manager and the ITE Team will work together to control of the scope of the project. The ITE Team will leverage the project scope description (see Section 2.1.1) and the project schedule (see Section 4.3) as a statement of work for each task. The ITE Team will ensure that they perform only the work described in the project scope description and generate the deliverables identified. The Project Manager will oversee the ITE Team and the progression of the project to ensure that this scope control process is followed.

A change in scope is defined by a change in the overall budget, a change that extends the overall schedule, or a change in the work to be performed. Any member of the Project Management Team, the ITE Team, the ASC Working Group, or the ITS JPO may propose a change in scope. The proposed change is assessed by the Project Management Team and ITE Team. If the Project Management Team and ITE Team determine that a change in scope is warranted, formal approval from ITS JPO is required. This PMP is to be updated in the case of an approved change in scope.

3 COMMUNICATIONS PLAN

3.1 Purpose of the Communications Plan

This Communications Management Plan sets the communications framework for the administration of the NTCIP 1202 v04 Project. It identifies representatives of the key stakeholders for the project, their roles, and contact information.

3.2 Stakeholder Points of Contact

ITS JPO Task Order Contracting Officer’s Representative (TOCOR)

Acts on behalf of the Contracting Officer (CO).

Steve Sill, ITS Architecture & Standards Program Manager
RITA ITS JPO
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Phone: 202-366-1603
Email: steve.sill@dot.gov

Deborah Curtis
Highway Research Engineer
Turner Fairbank Highway Research Center
6300 Georgetown Pike
McLean, VA 22101-2296
Phone: 202-493-3267
Email: Deborah.Curtis@dot.gov

Project Administrator/Coordinator

(Primary)
Siva R. K. Narla, Senior Director, Transportation Technology
Institute of Transportation Engineers
1627 I ("Eye") Street, NW, Suite 550 Washington, DC 20006
Phone: 202-464-6219
Email: snarla@ite.org

(Deputy)
Nicola Tavares, Technical Projects Specialist
Institute of Transportation Engineers
1627 I ("Eye") Street, NW, Suite 550 Washington, DC 20006
Phone: 202-464-6208
Email: ntavares@ite.org

Project Manager

Patrick Chan, Project Manager
Consensus Systems Technologies
200 East 89th Street, Unit 34A
New York, NY 10128
Phone: 917-497-6718
Email: patrick.chan@consystec.com

ASC Working Group Co-chairs

John Thai, Co-chair
City of Anaheim
Email: jthai@anaheim.net

Douglas Tarico, Co-chair
Q-Free/Intelight
Email: Douglas.Tarico@q-free.com

3.3 Communications with ITS JPO

Communications between the project team and ITS JPO will formally take place once monthly and deliverables occur as described in Section 3. It is anticipated that ITS JPO will have one or more technical staff participating in the ASC Working Group where they will have extemporaneous and informal communication with the project team.

Official communications between ITS JPO and the Project Team should be made through the Project Administrator/Coordinator and the TOCOR (see Section 3.3).

3.4 Communications with SAE International

The PWS requires that the NTCIP 1202 v04 standard be co-developed by ITE, American Association of State Highway and Transportation Officials (AASHTO), National Electrical Manufacturers Association (NEMA), and SAE International (SAE). ITE will work with SAE as follows:

- NTCIP 1202 v04 will be balloted by only the 3 partner SDOs for NTCIP - ITE AASHTO and NEMA. However, SAE will be informed of the progress and will have a voting member (currently Roy Goudy) on the ASC Working Group. However, SAE does not have a voting member on the NTCIP Joint Committee.
- Official communications between SAE and the Project Team should be made through the Project Administrator/Coordinator and the TOCOR (see Section 3.3). It is anticipated that SAE and its representatives will be invited to participate in the walkthroughs. SAE will also be invited to review the UCD version NTCIP 1202 v04.

4 DELIVERABLES AND MILESTONES

4.1 Monthly Progress Reports

On a monthly basis, the Project Administrator/Coordinator will provide a progress report to the CO. This report will contain the following:

- a) Project Schedule
- b) Deliverables Status
- c) Red Flags
- d) Budget
 - i) Limitation of Funds Analysis
 - ii) Chart 1: Current /Cumulative Expenditures by Month vs. Planned Expenditures
 - iii) Chart 2: Cumulative Expenditures vs. Funds Obligated by Month of Task Order
 - iv) Chart 3: Current Month Expenditures, Cumulative Expenditures vs. Total Budget, by Budget Line Item

The project schedule will reflect the baseline task start and end dates and the actual start and end dates for each task in the project schedule and the percentage of project completion. The project schedule will be provided in both Microsoft Project and Adobe Acrobat.

4.2 Deliverable Summary

Documents and software deliverables are to be sent electronically to the CO. Table 2 identifies the deliverables based on the project tasks.

Table 2. Deliverables by Project Task

Task	Deliverable Item	Delivery Date
1.1	Kickoff Meeting	9/29/22
	Progress Reports [TOPR Deliverable]	Monthly
1.2.1	Draft PMP [TOPR Deliverable]	9/12/22
	PMP [TOPR Deliverable]	10/5/22
1.2.2	Draft SEMP [TOPR Deliverable]	9/12/22
	SEMP [TOPR Deliverable]	10/5/22
2.1	Stakeholder and SME List [TOPR Deliverable]	10/12/22
	Draft Questionnaire [TOPR Deliverable]	10/12/22
	Final Questionnaire [TOPR Deliverable]	10/28/22

Task	Deliverable Item	Delivery Date
	Stakeholder Interview and Questionnaire Report Summary [TOPR Deliverable]	11/25/22
2.2	Draft ConOps [TOPR Deliverable]	12/2/22
2.3	SME List [TOPR Deliverable]	11/14/22
	Draft ConOps Walkthrough Plan [TOPR Deliverable]	11/16/22
	Final ConOps Walkthrough Plan [TOPR Deliverable]	12/6/22
	ConOps Walkthrough Workbook [TOPR Deliverable]	12/2/22
	Deliver ConOps Walkthrough Comment Resolution Report [TOPR Deliverable]	1/4/23
2.4	Final Updated ConOps [TOPR Deliverable]	1/4/23
3.1	Draft SRS [TOPR Deliverable]	2/9/23
3.2	SME List [TOPR Deliverable]	1/20/23
	SRS Walkthrough Plan [TOPR Deliverable]	1/24/23
	SRS Walkthrough Workbook [TOPR Deliverable]	2/9/23
	SRS Walkthrough Comment Resolution Report [TOPR Deliverable]	3/17/23
3.3	Final Updated SRS [TOPR Deliverable]	3/17/23
4.1	Draft SDD [TOPR Deliverable]	6/12/23
4.2	SME List [TOPR Deliverable]	5/23/23
	Draft SDD Walkthrough Plan [TOPR Deliverable]	5/25/23
	SDD Walkthrough Workbook [TOPR Deliverable]	6/12/23
	SDD Walkthrough Comment Resolution Report [TOPR Deliverable]	7/25/23
4.3	Final Updated SDD [TOPR Deliverable]	7/25/23
5	Draft NTCIP 1202 Test Procedures [TOPR Deliverable]	7/25/23
	Final NTCIP 1202 Test Procedures [TOPR Deliverable]	9/7/23
6.1	Proposed User Comment Draft (pUCD) [TOPR Deliverable]	9/7/23
	User Comment Draft (UCD) [TOPR Deliverable]	9/28/23
6.2	UCD Comment Resolution Tracking Report [TOPR Deliverable]	11/2/23
	Proposed Ballot Ready Standard [TOPR Deliverable]	10/26/23
	Published NTCIP 1202 v04 Standard and MIB [TOPR Deliverable]	2/15/24

4.3 Project Schedule

The Gantt Chart in Figures 2 through 5 provides the NTCIP 1202 v04 project schedule. Project tasks and deliverables that correspond to an explicit task included in the TOPR are identified. Deliverables are identified by a diamond shape (◆). Teleconferences are identified by a diamond shape within a circle (◈). Face-to-face meetings are identified by solid circle (●).

2.1.15	Deliver Stakeholder Interview and Questionnaire Report Summary [TOPR Deliverable]	0 days	Fri 11/25/22	Fri 11/25/22	33
2.2	Develop Draft Concept of Operations	25 days	Mon 10/31/22	Fri 12/2/22	
2.2.1	Draft New/Modified User Needs	25 days	Mon 10/31/22	Fri 12/2/22	33FF+5 days
2.2.2	Deliver Draft ConOps to USDOT and ASC Working Group [TOPR Deliverable]	0 days	Fri 12/2/22	Fri 12/2/22	36FF
2.3	Walkthrough on Draft Concept of Operations	39 days	Fri 11/11/22	Wed 1/4/23	31
2.3.1	Identify Subject Matter Experts (SMEs) and Invite to Scheduled Walkthrough [TOPR Deliverable]	1 day	Fri 11/11/22	Mon 11/14/22	40SF
2.3.2	Prepare ConOps Walkthrough Plan	2 days	Mon 11/14/22	Wed 11/16/22	41SF
2.3.3	Deliver Draft ConOps Walkthrough Plan to USDOT [TOPR Deliverable]	0 days	Wed 11/16/22	Wed 11/16/22	47SS-23 days
2.3.4	ConOps Walkthrough Plan - Review and Comment Period	10 days	Wed 11/16/22	Tue 11/29/22	41
2.3.5	Update ConOps Walkthrough Plan based on Comments	5 days	Wed 11/30/22	Tue 12/6/22	42
2.3.6	Deliver Final ConOps Walkthrough Plan [TOPR Deliverable]	0 days	Tue 12/6/22	Tue 12/6/22	43
2.3.7	Develop ConOps Walkthrough Workbook	2 days	Thu 12/1/22	Fri 12/2/22	36FF
2.3.8	Deliver ConOps Walkthrough Workbook to USDOT [TOPR Deliverable]	0 days	Fri 12/2/22	Fri 12/2/22	36FF,45
2.3.9	Perform ConOps Update Walkthrough	5 days	Mon 12/19/22	Fri 12/23/22	46FS+10 days
2.3.10	Resolve ConOps Walkthrough Comments	8 days	Mon 12/26/22	Wed 1/4/23	47
2.3.11	Deliver ConOps Walkthrough Comment Resolution Report [TOPR Deliverable]	0 days	Wed 1/4/23	Wed 1/4/23	48FF
2.4	Final Updated Concept of Operations	8 days	Mon 12/26/22	Wed 1/4/23	
2.4.1	Develop Final Updated ConOps	8 days	Mon 12/26/22	Wed 1/4/23	47
2.4.2	Deliver Final Updated ConOps to ASC Working Group [TOPR Deliverable]	0 days	Wed 1/4/23	Wed 1/4/23	51FF
3	Develop Software Requirements Specification (SRS) Update	50 days	Thu 1/5/23	Fri 3/17/23	
3.1	Develop Draft Software Requirements Specification	25 days	Thu 1/5/23	Thu 2/9/23	
3.1.1	Develop Draft SRS	25 days	Thu 1/5/23	Thu 2/9/23	52
3.1.2	Deliver Draft SRS to USDOT and ASC Working Group [TOPR Deliverable]	0 days	Thu 2/9/23	Thu 2/9/23	55
3.2	Walkthrough on Draft Software Requirements Specification	41 days	Thu 1/19/23	Fri 3/17/23	
3.2.1	Identify Subject Matter Experts (SMEs) and Invite to Scheduled Walkthrough [TOPR Deliverable]	1 day	Thu 1/19/23	Fri 1/20/23	59SF
3.2.2	Prepare SRS Walkthrough Plan	2 days	Fri 1/20/23	Tue 1/24/23	60SF
3.2.3	Deliver SRS Walkthrough Plan to USDOT [TOPR Deliverable]	0 days	Tue 1/24/23	Tue 1/24/23	63SS-23 days
3.2.4	Develop SRS Walkthrough Workbook	2 days	Wed 2/8/23	Thu 2/9/23	55FF
3.2.5	Deliver SRS Walkthrough Workbook to USDOT [TOPR Deliverable]	0 days	Thu 2/9/23	Thu 2/9/23	61,55FF

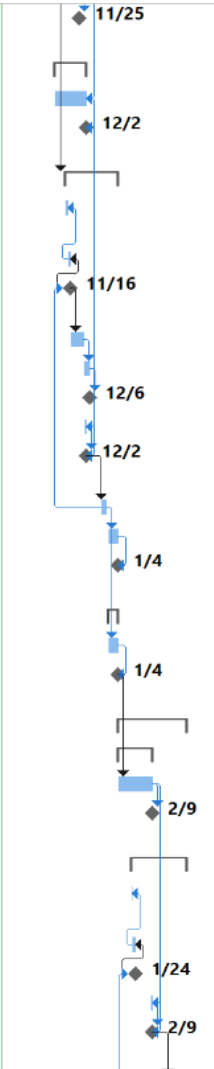


Figure 3. NTCIP 1202 v04 Project Schedule (Part 2 of 4)



Figure 4. NTCIP 1202 v04 Project Schedule (Part 3 of 4)

6	Draft and Final 1202 v04	135 days	Thu 8/3/23	Thu 2/15/24	
6.1	Draft NTCIP 1202 v04	73 days	Thu 8/3/23	Tue 11/14/23	
6.1.1	Generate and Compile 1202v04 MIB/ASN.1	10 days	Thu 8/24/23	Thu 9/7/23	92FF
6.1.2	Develop proposed User Comment Draft (pUCD)	25 days	Thu 8/3/23	Thu 9/7/23	92FF,83
6.1.3	Deliver pUCD to ASC Working Group [TOPR Deliverable]	0 days	Thu 9/7/23	Thu 9/7/23	96FF,95FF
6.1.4	pUCD - Review and Comment Period	10 days	Fri 9/8/23	Thu 9/21/23	97
6.1.5	Adjudicate Comments on pUCD and Develop User Comment Draft (UCD)	5 days	Fri 9/22/23	Thu 9/28/23	98
6.1.6	Deliver UCD to NTCIP Joint Committee and USDOT [TOPR Deliverable]	0 days	Thu 9/28/23	Thu 9/28/23	99
6.1.7	NTCIP Joint Committee Vote to Approve	10 days	Fri 9/29/23	Thu 10/12/23	100
6.1.8	UCD - Review and Comment Period	23 days	Fri 10/13/23	Tue 11/14/23	101
6.2	Ballot and Final NTCIP 1202 v04	85 days	Fri 10/13/23	Thu 2/15/24	
6.2.1	Resolve UCD Comments and Develop proposed Ballot Ready Standard	10 days	Fri 10/13/23	Thu 10/26/23	101
6.2.2	Deliver UCD Comment Resolution Tracking Report [TOPR Deliverable]	0 days	Thu 10/26/23	Thu 10/26/23	104FF
6.2.3	Deliver proposed Ballot Ready Standard to NTCIP Joint Committee [TOPR Deliverable]	0 days	Thu 10/26/23	Thu 10/26/23	104FF
6.2.4	NTCIP Joint Committee Vote to Approve	10 days	Fri 10/27/23	Thu 11/9/23	106
6.2.5	SDO Approval Approval Process	45 days	Fri 11/10/23	Thu 1/18/24	107
6.2.6	Generate and Compile Updated 1202v04 MIB/ASN.1	5 days	Fri 10/20/23	Thu 10/26/23	104FF
6.2.7	Resolve SDO Comments	10 days	Fri 1/19/24	Thu 2/1/24	108
6.2.8	Publish NTCIP 1202 v04 Standard and MIB [TOPR Deliverable]	10 days	Fri 2/2/24	Thu 2/15/24	110

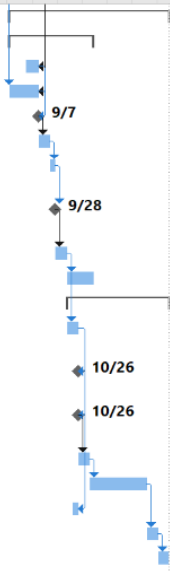


Figure 5. NTCIP 1202 v04 Project Schedule (Part 4 of 4)

5 QUALITY MANAGEMENT PLAN

5.1 Purpose of the Quality Management Plan

This Quality Management Plan describes how quality will be managed throughout the life of the project. It includes processes and practices for ensuring quality planning, quality control and quality assurance.

5.2 Quality Planning

To be successful, this PMP has integrated a quality system into the project tasks, project schedule, project deliverables and project team. The project relies heavily on the ASC Working Group to perform the role of a quality review team. The ASC Working Group is made up of SMEs including those from public agencies, manufacturers, software providers, and consulting firms. It includes operational users who provide quality input from the user's perspective. The ASC Working Group also includes one or more technical staff from ITS JPO. This allows the ITS JPO to have quality input early in the development of project deliverables. It is the responsibility of the ASC Working Group and the Project Manager to ensure that the Working Group is made up of individuals appropriate for the quality aspects of the project. The Project Manager and ITE team have been selected for their experience with the development of NTCIP Standards, their particular expertise applying the systems engineering process to the development of NTCIP Standards, and their track record of implementing NTCIP Standards.

There are two types of "quality" addressed by this plan: "product quality" and "process quality." Product quality focuses on the project deliverables. The project scope description (see Section 2.1.1) identifies well-known industry standards for all document deliverables. Process quality focuses on how the project deliverables will be produced. The NTCIP 1202 v04 Project employs a formal systems engineering process. The project scope description and schedule define task and process deliverables such as document walkthroughs and multiple cycles of review by the ASC Working Group, comment and comment resolution periods all directed at the aspect of quality.

5.3 Quality Control

This section describes the process for monitoring and recording the results of executing the quality activities. It applies to the project's products as opposed to its processes.

It is intended that each document will be maintained through a document-oriented process. Each document produced as a part of this PMP will maintain a Comment Matrix with a unique comment identifier, the name of the commenter, the date of the comment, the version of the document that the comment pertains to, the comment type (Editorial or Technical), the page number, the section number, the issue, the proposed solution, ASC Working Group conclusions and the disposition (Open/Closed). For all software products of this PMP, issue/change tracking will be provided through the OSS.

The ASC Working Group will review of all project deliverables will be performed according to the project schedule. Additional reviews may be meet project needs. Documents will be compared to the industry standards from which they are based to ensure that critical information is not missing. Reviewers will verify that deliverable documents:

- a) contain suitable material for the target audience;
- b) are organized in presentation;
- c) contain proper word use and English diction;
- d) contain detailed illustrations;
- e) are comprehensive, complete and technically correct; and
- f) are edited for grammatical and editorial errors.

Project deliverables will be judged on a “suitable for purpose” basis. The ASC Working Group may identify more items or make suggestions for changes to a document than are needed to meet the project goals. In some cases, gaining consensus on technical matters within the ASC Working Group can be difficult and time consuming. If any undertaking by the ASC Working Group may jeopardize the project schedule, its Co-chairs will make decisions and recommendations on the Working Group’s behalf.

5.4 Quality Assurance

A Quality Checklist will be established and maintained by the Project Manager to assist in identifying specific items to be reviewed by the ASC Working Group. A Project Issue Log will be established and maintained by the Project Manager to capture any issue regarding the project that should be addressed by the project management team including items that pertain to quality. Items for the Quality Checklist and Project Issue Log may be proposed by any member of the project team. It is up to the project management team to determine if these items should be included on these lists and if any action should be taken. The Project Management Team will discuss any quality items on a weekly basis.

6 TEAM MANAGEMENT PLAN

6.1 Purpose of the Team Management Plan

This Team Management Plan is a tool which aides in the management of the Project Team throughout the NTCIP 1202 v04 Project. It contains the roles, responsibilities and reporting on the project and an organizational chart. Estimated work efforts for the team members, arranged by their organization, are found in Appendix D.

6.2 Roles, Responsibilities and Reporting

Project management responsibilities are jointly held by SDO staff and the ASC Working Group co-chairs. SDO staff has administrative and fiscal responsibilities. The ASC Working Group co-chairs, with assistance from SDO staff, are responsible for leading and managing the Working Group. SDO staff with assistance from ASC Working Group co-chairs are responsible for managing the consulting team to produce the work item technical deliverables. Both parties are responsible for meeting the agreed schedule and the success of the work item. Table 4 identifies the work item management team. The following steps will be used to manage this work item:

- a) Monthly, consultants will report, via email, a summary of the hours expended and remaining by each subtask for which the consultant is assigned; and provide a brief report on the progress made on each ST during the reporting period, as well as an estimate of work to be accomplished in the subsequent reporting period (again, by subtask). The subtask number is used as identified in the work item schedule in Section 4.3. This Consultant Report is not an invoice (due separately) but a summary of work accomplished and hours logged. The Consultant Report is due the first week of the month for the preceding month's activities.
- b) ITE staff will provide an indication of the percentage of each subtask completed for the work item, as part of the Monthly Progress Report, or as a revision of MS Project Schedule (included in the Monthly Progress Report). The Project Schedule is due the second week of the month for the preceding month's activities.
- c) An ASC management teleconference will be scheduled, on a recurring basis, as needed, to review schedule/progress, financial status, and troubleshoot performance. The teleconference may include: SDO staff, between SDO staff, ASC WG co-chairs, and the NTCIP JC chair. The recurring frequency and time of the teleconference will be agreed by the management team.

The ASC WG co-chairs, in consultation with SDO staff, may create subgroups of the ASC WG to focus on technical specialties or to expedite the resolution of unforeseen issues.

The ASC WG co-chairs and SDO staff shall use the ASC email listserv reflector provided by the NTCIP Coordinator for communications with the ASC WG members and interested parties. The ASC WG co-chairs shall use and maintain the ASC work area of the NTCIP website (see www.ntcip.org/committees/) and the email listserv reflector for meeting agendas, meeting minutes, work item documents and interim work item products. See the latest version of NTCIP 8006 NTCIP Administrative Policy and Procedure, Section 14, for the use of the email listserv and the NTCIP committee work areas.

SDO staff shall notify the paid work item consultants and those participants pre-approved for travel reimbursement of the NTCIP policies and procedures, and seek appropriate government approval for such travel. Of particular note are the following sections of NTCIP 8006: Section 12, Procedures for Consultant Cost Accounting and Invoicing; Section 13, Project Accounting and Financial Reporting; and Annex G, NTCIP Background and Work Flow Tutorial.

Table 3. NTCIP 1202 v04 Project Team and Reporting

Name	Project Role	Responsibilities	Reporting
<p>Chan, Patrick ConSysTec 718-767-5120 Patrick.chan@consystec.com</p>	<p>Systems Engineer</p>	<ul style="list-style-type: none"> • Part of the Project Management Team. • Works with the ITE program manager to maintain project reporting required by the USDOT. • Plays a quality management function on deliverables. • Provides leadership for the rest of the consulting team. • Prepares project policies and procedures. • Organizes meetings and keeps records. • Coordinates with the Chairs of the ASC Working Group • Maintains communication and consensus building within the ASC Working Group. 	<ul style="list-style-type: none"> • Provides weekly progress reports to the Project Administrator/Coordinator per Section 4.2 including an updated Microsoft Project Schedule.
<p>Lahiri, AJ ConSysTec 646-874-9289 ajl@consystec.com</p>	<p>Systems Engineer</p>	<ul style="list-style-type: none"> • Provides the rigor required to verify that a complete and correct product is being developed. • Prepares and maintains the PMP, SEMP, and MS Project schedule • Develops ConOps, Requirements documents. • Develop systems engineering portions of design documents, including the traceability matrices. • Develops the ballot and published versions of the standard. • Leads walkthroughs of documents at various stages of the project. 	<ul style="list-style-type: none"> • Provides weekly progress reports to the Project Manager per Section 4.2.
<p>Narla, Siva ITE 202-785-0060 x119 snarla@ite.org</p>	<p>SDO (Lead)</p>	<ul style="list-style-type: none"> • Part of the Project Management Team. • Official administration and coordination of the project from a contracts perspective. • Monitors project expenditures in labor, travel expenses and capital expenses. • Official project communications channel to the COR. 	<ul style="list-style-type: none"> • Provides monthly progress reports to the COR per Section 4.1 including an updated Microsoft Project Schedule.
<p>Rouse, Deborah ITE</p>	<p>Technical Editor</p>	<ul style="list-style-type: none"> • Ensures project documents contain suitable material for the target audience. • Ensures project documents are organized in presentation. • Reviews project documents for grammatical and editorial errors. • Reviews project documents for proper word use and English diction. 	<ul style="list-style-type: none"> • Provides weekly progress reports to the Project Manager per Section 4.2.

Name	Project Role	Responsibilities	Reporting
Tavares, Nicola ITE	SDO (Liaisons)	<ul style="list-style-type: none"> Part of the Project Management Team. Ensure conformance with NTCIP Procedures. Ensure draft NTCIP 1202 v04 content is developed in a manner consistent with other NTCIP standards, NTCIP 8002 Annex B1, and TPG format requirements to assure quality, consistency and clarity. 	<ul style="list-style-type: none"> Provides weekly progress reports to the Project Manager per Section 4.2.
Doherty, Brian NEMA Brian.doherty@nema.org	SDO (Liaisons)	<ul style="list-style-type: none"> Part of the Project Management Team. 	<ul style="list-style-type: none"> Provides weekly progress reports to the Project Manager per Section 4.2.
White, Robert AASHTO rwhite@aaashto.org	SDO (Liaisons)	<ul style="list-style-type: none"> Part of the Project Management Team. 	<ul style="list-style-type: none"> Provides weekly progress reports to the Project Manager per Section 4.2.
Wilson, Keith SAE International Keith.Wilson@sae.org	SDO (Liaisons)	<ul style="list-style-type: none"> Part of the Project Management Team. 	<ul style="list-style-type: none"> Provides weekly progress reports to the Project Manager per Section 4.2.
Thai, John City of Anaheim jthai@anaheim.net	ASC Working Group co-chair	<ul style="list-style-type: none"> Part of the Project Management Team. Provides leadership of the ASC Working Group to carry out the work items assigned by the ASC Working Group. Presides over ASC Working Group teleconferences and meetings. Focuses the effort of the ASC Working Group to review documents and provide feedback to the ITE team in a timely fashion. Builds consensus with the ASC Working Group members. 	<ul style="list-style-type: none"> Provides reporting on the progress of the NTCIP 1202 v04 project to the ASC Working Group Makes requests for assistance from the NTCIP Joint Committee if there are Joint Committee issues that cannot be resolved.
Tarico, Douglas Q-Free Douglas.Tarico@q-free.com	ASC Working Group co-chair	<ul style="list-style-type: none"> Part of the Project Management Team. Provides leadership of the ASC Working Group to carry out the work items assigned by the ASC Working Group. Presides over ASC Working Group teleconferences and meetings. Focuses the effort of the ASC Working Group to review documents and provide feedback to the ITE team in a timely fashion. Builds consensus with the ASC Working Group members. 	<ul style="list-style-type: none"> Provides reporting on the progress of the NTCIP 1202 v04 project to the ASC Working Group Makes requests for assistance from the NTCIP Joint Committee if there are Joint Committee issues that cannot be resolved.

6.2 Management Tools and Reports

The following tools should be used for management of this work item:

Email for informal reports and messages;

- MS Word 2010 for general reports and documents;
- MS Project 2010 for schedule updates; and
- MS Access 2010 for maintaining a database of comments, their analysis and disposition for the various drafts of the NTCIP 1202 v04 standard.

6.3 Organizational Chart

Figure 6 shows an organizational chart for ASC Working Group Project. The project management team consists of the Project Administrator/Coordinator(s), the Project Manager, the ASC Working Group Committee Co-chairs, and SDO Liaisons.

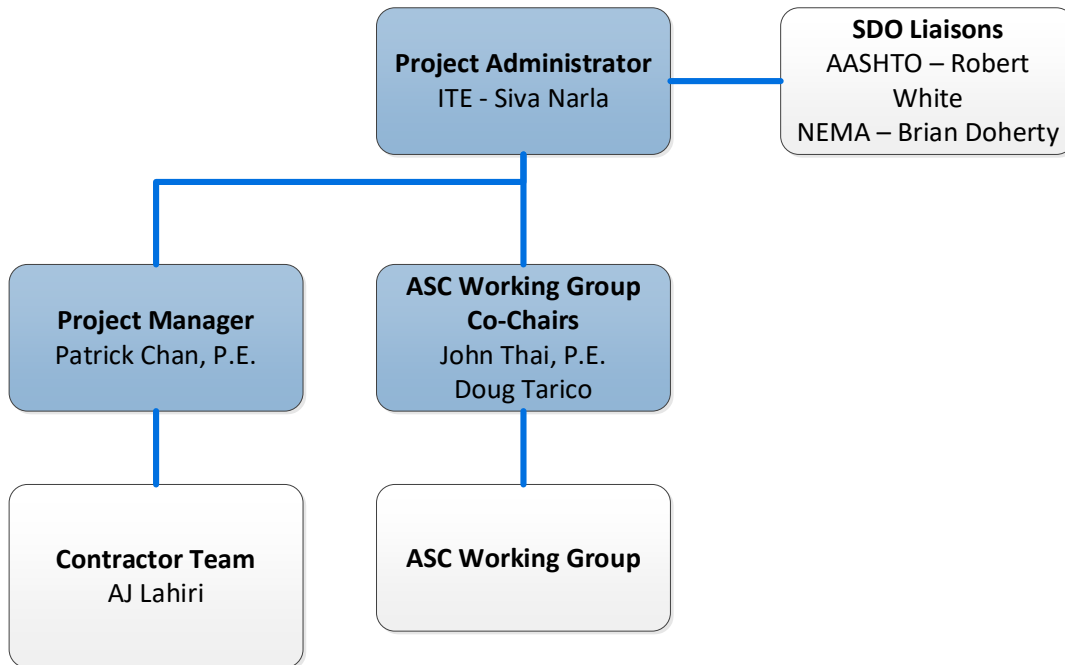


Figure 6. NTCIP 1202 v04 Project Organization

APPENDIX A – REFERENCES

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APPENDIX B – GLOSSARY, ACRONYMS, AND ABBREVIATIONS

Term	Definition
AASHTO	American Association of State Highway and Transportation Officials
ASC	Actuated Signal Controller
ConOps	Concept of Operations
CO	Contracting Officer
CTI	Connected Transportation Interoperability
IOO	Infrastructure Owner Operators
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation Systems
JPO	Joint Program Office
NTCIP	National Transportation Communications for ITS Protocol
PMP	Project Management Plan
PRL	Protocol Requirements List
PWS	Performance Work Statement
RTM	Requirements Traceability Matrix
SC	Steering Committee
SDD	System Design Details
SDO	Standards Development Organization
SEMP	Systems Engineering Management Plan
SME	Subject Matter Expert
SNMP	Simple Network Management Protocol
SRS	System Requirements Specification
TBD	To Be Determined
TMC	Traffic Management Center
TOCOR	Task Order Contracting Officer's Representative
TOPR	Task Order Proposal Request
UCD	User Comment Draft
USDOT	United States Department of Transportation
Walkthrough	A step-by-step presentation by the author of a document in order to gather information and to establish a common understanding of its content.
WBS	Work Breakdown Structure

APPENDIX C – PROJECT TEAM RESUMES

This section will be updated

APPENDIX D – WORK EFFORT BY ORGANIZATION AND INVOICING TEMPLATES

1. Invoice Reporting

ITE shall submit monthly invoices addressing work completed. Each voucher will include a breakdown of ITE's and subcontractors' hours and labor costs in accordance with invoice guidance and Billing Instructions for Cost Reimbursable Orders as described in IDIQ Exhibit J. 5.

Invoices shall be submitted directly to the Delphi system or as otherwise specified. Additionally, ITE shall submit the contract and task order invoice (if applicable) concurrently to the COR, the TOCOR (if applicable), ITSProjects@dot.gov, and other recipient(s) (if applicable) as directed by the COR.

Schedules and Performance Reporting

The Contractor shall provide:

- a) Monthly Status Reports – the Contractor shall submit monthly progress reports no later than 15 days after the end of the month being reported on in the format specified by the COR. The progress report shall describe work completed during the period, anticipated work, problems encountered and and/or anticipated as well as financial status including at least hours expended and other costs.
- b) Project Schedule – the Contractor shall submit, to the Government, an initial project schedule in Microsoft Project format within sixty (60) days after the effective date of the contract and updates showing the percent complete of major deliverables every thirty (30) days thereafter. The schedule shall include at a minimum, the major deliverables and milestones and adhere to the Microsoft Project template structure provided by the COR. Any changes to due dates after the initial project schedule baseline must be approved by the Government. The Contractor shall support the identification of schedule dependencies related to the project and in accordance with the Government defined process.
- c) Risk Register – the Contractor shall document risks that might affect the project and the characteristics of the risk defined by the ITS-JPO. The COR will provide a Microsoft Excel-based Risk Register template for the Contractor to populate and update as necessary. Each risk shall have a unique number, probability of occurrence and impact of occurrence rating. The risk log shall be updated monthly and submitted with monthly progress reports.

The costs incurred in the administrative reporting are unallowable direct costs under the contract and, therefore, cannot be charged as direct costs to the Government. Contractor is to handle such costs in accordance with their disclosure statements/cost accounting systems.

ITS-JPO templates are available at http://www.its.dot.gov/project_mang/index.htm

2. Deliverables

The Contractor shall submit Interim and Final Deliverables concurrently to the COR, the TOCOR (if applicable) and to ITSProjects@dot.gov once these deliverables have been accepted by the Government. The Contractor shall include the contract number (and task order number if appropriate) in the email subject line for each deliverable. The Government may request the Contractor to include additional specified keywords in the subject line of emails containing deliverables. Additionally, the Government may request the Contractor to submit Deliverables to an electronic repository as specified by the COR.