

DATE: September 24, 2009

TO: AASHTO, ITE, and NEMA

SUBJECT: **Recommended Standard of NTCIP 2301 v02,
Simple Transportation Management Framework
Application Profile (AP-STMF) – Version 02**

ACTION: Request for Ballot to Approve

RECOMMENDATION. This Bulletin reports that the Joint Committee on the NTCIP accepted the proposed NTCIP 2301 v02, *Simple Transportation Management Framework Application Profile (AP-STMF) – version 02*, as a Recommended Standard, and agreed to refer the document to AASHTO, ITE, and NEMA for balloting and approval.

The acceptance was approved at the Atlanta meeting held on April 9-10, 2008, by the required 12-vote super majority of the 18-member Joint Committee, and carried with 13 affirmative votes, no negative votes, no abstentions, 5 members absent, and no vacant seats.

The Joint Committee on the NTCIP contributes to the joint standards development process by accepting a proposed draft document at two stages in its development – first as a User Comment Draft and then again as a Recommended Standard.

BACKGROUND. This document was developed to be a Joint AASHTO / ITE / NEMA Standards Publication. The NTCIP 2301 document defines an application profile that is a combination of standards intended to meet specific requirements for information management and information transfers to and from roadside devices in a packet network environment. The document scope covers the application, presentation and session layers of the OSI Reference Model.

The NTCIP 2301 v02 revision now includes reference to the NTCIP 1103, Transportation Management Protocols for the Simple Transportation Management Protocol (STMP), and to the Simple Fixed Message Protocol (SFMP). The SFMP provides lower overhead without object identifiers, and is a compromise with STMP. Other former “Class B” profile specifications have been retained.



NTCIP 2301 v02 was part of FY04 Work Order 11-0401 Closeout, with a subtask ST07 revised forecast for the Joint Committee Recommended Standard acceptance milestone in October 2006.

Revisions to 2301 v01 were discussed at nine face-to-face meetings between 2002 and 2008. There were delays in the progress of developing the NTCIP 2301 - STMF Version 02 because of issues related to the referenced standards not having reached NTCIP Recommended Standard status.

NTCIP 2301 was developed by the Joint Committee's Base Standards and Profiles Working Group, which is chaired by Bob De Roche (Bob De Roche Consulting). The BSP2 WG has nine members, and seeks new members from both the public and private sectors.

DOCUMENT ORGANIZATION. The NTCIP 2301 v02 only includes two sections and an Annex A Profile Requirements List.

The Standards Development Report required by the ITE standards development process is attached. The SDR provides a summary of the document development milestones, the working group members, and other standards that have been examined with regard to harmonization and duplication of content.

An electronic copy of the Recommended Standard is posted in the LIBRARY area of the NTCIP Website, at www.ntcip.org.

USER COMMENT DISPOSITION. All user comments regarding NTCIP 2301 v02 were recorded and the disposition of each comment is reported. In the report, official "User Comments" are designated with a "UC0000" number in the User Comment Number field.

There was only one comment received on the UCD of NTCIP 2301 v02.12b. UC0420 from NCDOT was "No comments to add." Therefore, there is no other additional report from the User Comment database posted in the NTCIP Web site's Forum for Standards.

NOTES. The Joint Committee accepted NTCIP 2301 version v02.16, March 2008, as the Recommended Standard. Additional technical editing and quality improvement were included in version v02.18. Those editing and administrative delays postponed the issue of this Standards Bulletin.

In June and July 2009, nine outstanding editorial questions were resolved with the BSP2 WG, and the NTCIP Joint Committee was afforded an additional review.

The 2009 revisions included the following six changes:

1. The term “PICS proforma” was replaced with PRL throughout. Proforma means template, and a PRL serves as a template for the PICS.
2. Version designations were added to each NTCIP standard designation. For example, NTCIP 2201 became NTCIP 2201:2003, and NTCIP 1103 became NTCIP 1103 v02.
3. Drafts (through SDO ballot, as well as soft copies of published standards) now have a “single-page” appearance (with the NTCIP designation and page number appearing on the upper right), so that the “soft copies” are more amenable to computer-based review. It is only the hard copy (paper version) of NTCIP standards that will have an “odd page–even page” appearance.
4. Sec. 1.3.1 Normative References—IAB STD 50 was removed from Normative References because there was no in-line text reference to IAB STD 50.
5. Sec. 1.3.2 Other References—The following were included in a newly added Other References entry at Section 1.3.2: ISO/IEC 10731:1994, NTCIP 1102:2004, NTCIP 1104 v01, and NTCIP 2202:2001. These standards are referenced (as in-line text references) within NTCIP 2301 v02.
6. Annex A.2 Standards Referenced. The referenced standards listed differed from Normative or Other references (Secs. 1.3.1 or 1.3.2). An entry, NTCIP 1201 v03.06, was deleted, because there was no related in-line text reference. Text now appears referring to Secs. 1.3.1 and 1.3.2.

For any future revision of NTCIP 2301, the NTCIP Joint Committee has considered whether SFMP should be maintained. The BSP2 WG chair has commented that the original need for CCTV camera control while using a simple processor had been overcome by the camera manufacturers themselves using SNMP, now running on larger processors. The Joint Committee has expressed an interest in collecting information to inform their discussion on removing support for SFMP, and is in consensus to mark SFMP as frozen and asked NTCIP users and BSP2 WG members to start collecting any supporting documentation on the use of SFMP.

NAVIGATE THE PDF. To help users navigate the large document, the PDF file was authored with embedded links. The links can be found in the Table of Contents and within the text.

To use the links when browsing with Adobe® Reader®, select the Hand tool, and the Hand will change to the pointing finger when over a link. To return to the prior page after clicking a link, use Alt + Left Arrow to return to the Previous View. See the reader's View menu for more shortcuts.

BALLOT INSTRUCTIONS. The eligible voting representatives who receive this Bulletin are asked to follow the ballot instructions of their standards organization.

**ATTACH-
MENTS:** 1. NTCIP 2301 v02, *Simple Transportation Management Framework Application Profile (AP-STMf) – Version v02*, version v02.18, August 2009, ~42 pages.

2. ITE SDR for NTCIP 2301 v02, 9/24/09 rev3, 5 pages.

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**ITE Standards Development Report (SDR) for
NTCIP 2301 *Simple Transportation Management Framework*
Application Profile Version v02**

Date prepared: March 24, 2008 [rev 9/24/09 as rev3 for SB]
Prepared by: Robert De Roche
BSP2 WG chair
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TO: Staff of the Institute of Transportation Engineers

CC: NTCIP Coordinator

The following Standards Development Report is provided to meet the requirements of the Institute of Transportation Engineers (ITE) Standards Development Procedures, dated May 2003, and as part of the joint development and approval process for the NTCIP.

1. Latest version of the draft Recommended Standard.

The document number and full name of the proposed document is

NTCIP 2301 v02.18, August 2009. *National Transportation Communications for ITS Protocol (NTCIP) Simple Transportation Management Framework Application Profile - Version 02*

To review the document, see the filename

2301v0218.doc or *.pdf

To review a redlined version comparing this version to 2301v0110b, see the filename

2301v0217b compared with v0110b.doc or *.pdf

2. Summary status indicating the current stage in the ITE standards development process.

See the Development Milestone table in Item 3. As of the date of this SDR, the subject standard has achieved Milestone 11 – the NTCIP Joint Committee has accepted the proposed draft as a Recommended Standard.

3. Status report, including for each procedures step, the dates, balloting results, and other information explaining the actions taken to carry out each step.

The following Development Milestones table notes the date for each ITE development process stage.

ITE Standards Development Milestone	Date, Description of Action Taken and Other Background Information
1. Decision Made and Effort Announced	Jan 2000. Joint Committee discussed scope of work and charter WG.
2. Committee Formed	Jan 2000. Joint Committee approved WG Bylaws and roster.
3. Committee Develops Draft Proposed Standard	Jan 2000. WG met to begin development effort.
4. Committee Ballots Draft Proposed Standard	August 2002 - August 2007. WG developed Working Group Draft of Version 2
5. Standard Review Panel Ballots Draft	August 2007. WG developed proposed User Comment Draft.
6. Draft Proposed Standard Approved	September 2007. Joint Committee accepted proposed User Comment Draft.
7. Proposed Standard Published to Solicit Comments	September 2007. User Comment Draft distributed by AASHTO, ITE, and NEMA for review and comment by memberships.
8. Comments Considered by Committee	Aug 2007 - Oct 2007. Worked Group met to resolve and dispose of user comments.
9. Committee Ballots Revised Proposed Standard	Oct 2007. Working Group reached consensus on disposition of user comments.
10. Standard Review Panel Ballots Revised Proposed Standard	March 2008. Working Group reached consensus on a proposed draft Recommended Standard. Delay was due to need for up to date references
11. Revised Standard Approved	April 2008. Joint Committee accepted the proposed Recommended Standard. June 2008 to July 2009. Staff and BSP2 WG editing and quality improvement.
12. Intent to Adopt Announced	<i>ITE staff receives NTCIP Standards Bulletin with referral for approval and announces intent.</i>
13. ITE Standard Adopted by the ITE Board	<i>ITE Board of Direction adopts Standard.</i>
14. Maintenance of Standard	<i>SDOs maintain the Standard on a five-year review cycle.</i>

Note-Steps in italic are future milestones.

To accomplish Development Milestones 4, 5, 8, 9, and 10, the Working Group discussed this standard during a series of meetings on these dates and at these locations:

August 13-14, 2002 in San Diego, CA

May 8-9, 2002 in Syracuse, NY

November 19-20, 2002 in Orlando, FL

January 12-16, 2004 in Orlando, FL

September 13-15, 2004 in Denver, CO

November 29-December 3, 2004 in Orlando, FL

February 14-17, 2005 in Reno, NV
May 17-20, 2005 in Anaheim, CA
August 15-15, 2005 in Atlanta, GA
January 9-11, 2006 in Austin, TX
April 17-20, 2006 in Colorado Springs, CO
March 5-8, 2007 in Tampa, FL
June 13-14, 2007 in Dallas, TX
September 25-28, 2007 in Austin, TX
February 11-13, 2008 In Salt Lake City, UT

In addition to the nine face-to-face meetings, aspects of this standard were discussed at 1 teleconference call as follows:

December 12, 2007

There were delays in the progress of developing the NTCIP 2301 - STMF Version 02 Standard because of issues related to the referenced standards not having reached NTCIP Recommended Standard status.

4. Table listing each written comment received to date from committee members, registrants, and others. For each comment, the table shall include the actions taken (or proposed to be taken) in response to that comment, and the reason(s) for the action.

There was only one comment received in regard to NTCIP 2301 v02.12b. It was from Buddy Murr with NCDOT dated February 6, 2007. His comment recorded as UC0420 was "No comments to add."

5. Committee objectives

The scope and objectives of the BSP 2 Working Group is to serve as a subdivision of the NTCIP Joint Committee, and to develop and maintain the NTCIP communication level standards publication and other documents that define the technical specifications for all field devices. For additional information see BSP WG Bylaws v3 dated January 27, 1999 and BSP WG Charter v1 dates January 27, 1999.

6. List of Committee Members

The following are active participating members of the BSP2 Working Group:

Ralph Boaz - Pillar Consulting
Bob De Roche - Robert De Roche Consulting
Bud Kent - Siemens ITS
Roberto Lopes- Florida Department of Transportation
Greg Mizell - Econolite Control Products
Alex Mousadi - URS Greiner
Peter Ragsdale - US Traffic
Robert Rausch - Transcore

Joerg "Nu" Rosenbohm - Telvent Farradyne

In addition to the above active/voting members, the following numbers of observing and liaison members subscribe to the BSP2 email reflector:

- 10 Observing members
 - 3 - Public Sector
 - 2 - Consultants
 - 5 - Vendors
- 2 Liaison members

The following are WG voting members, observing members, and/or liaison members who are affiliated with non-U.S. companies or organizations:

Mr. Lesly Bien-Aimé - Signalisation Ver-Mac, Inc

7. Other Material of Interest

This standard was developed with funding assistance from the U.S. DOT / RITA. The standard is likely to be most applicable in the U.S.; however, the standard is available for use by anyone.

8. Declaration confirming that any other known national and international standards have been examined with regard to harmonization and duplication of content, and that no significant conflicts with another known standard have been identified.

IAB STD 15 RFC 1157: 1990, Simple Network Management Protocol

The Internet RFC 1157 (SNMP) was essentially adapted as part of NTCIP 2301. Since the RFC did not include some necessary features for the Intelligent Transportation Systems environment, the framework was extended to add the Simple Transportation Management Protocol and the Simple Transportation Management Protocol.

9. Abstract of the Standard

This standard is applicable to transportation devices and management systems that must operate in Intelligent Transportation Systems. As an application profile, it specifies a set of protocols and standards applicable to the application, presentation, and session layers of the OSI Basic Reference Model.

It contains mandatory requirement statements that are applicable to all devices claiming conformance to this standard. It also contains options and conditional requirements, which may be applicable to a specific environment in which a device is used.

The following keywords apply to this document: AASHTO, Dynamic Objects, ITE, NEMA, NTCIP, SMI, SNMP, STMP, SFMP

In 1992, the NEMA 3-TS Transportation Management Systems and Associated Control Devices Section began development of the NTCIP. The Transportation Section's purpose was in response to user needs to include standardized systems communication in the NEMA TS 2 standard, *Traffic Controller Assemblies*. Under the guidance of the Federal Highway Administration's NTCIP Steering Group, the NEMA effort was expanded to include the development of communications standards for all transportation field devices that could be used in an Intelligent Transportation Systems (ITS) network.

In September 1996, an agreement was executed among AASHTO, ITE, and NEMA to jointly develop, approve, and maintain the NTCIP standards. After the NTCIP Class B Profile was published, the Joint Committee determined that the communications profiles should be modular to meet the varied needs of different communication environments. The Joint Committee on the NTCIP formed both the Base Standards and Protocols Working Group (BSP WG) and the Profiles WG. After a reorganization, the two WGs merged to form the Base Standards and Profiles (BSP2) WG. The first meeting of the working group was in January 1999. The BSP WG submitted a work plan and initiated development of STMF version 2 in August 2002.

10. Description of Alternate Processes

The process used in the development of this standard is defined in the NTCIP 8001 v01.07, *NTCIP Joint Standardization Policies and Procedures*, which includes the former *Joint Standards Committee Standards Development Process White Paper v05*, September 2000. See the White Paper section 6 for the relationship to the ITE standardization process.

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