

DATE: April 24, 2009

TO: AASHTO, ITE, and NEMA

SUBJECT: **Recommended Standard of NTCIP 1103 v02,
Transportation Management
Protocols (TMP) – Version 02**

ACTION: Request for Ballot to Approve

RECOMMENDATION. This Bulletin reports that the Joint Committee on the NTCIP accepted the proposed NTCIP 1103 v02, *Transportation Management Protocols (TMP) – Version 02*, as a Recommended Standard, and agreed to refer the document to AASHTO, ITE, and NEMA for balloting and approval. The recommendation started at the regularly scheduled Joint Committee meeting in November 2007, when the Joint Committee instructed the BSP2 WG to revise NTCIP 1103 into two versions, v02 (without Traps for consideration as a proposed Recommended Standard) and v03 (with Traps for consideration as a proposed User Comment Draft).

In their January 2008 teleconference, the Joint Committee authorized an electronic ballot to accept the revised NTCIP 1103 v02.14b, (without Traps), as a Recommended Standard. In their February 2008 Joint Committee teleconference, the e-ballot was reported concluded and won acceptance by the required two-thirds majority of the 18-member committee, as the question to recommend the standard carried with 15 affirmative votes, no negative votes, and 3 members not responding. Therefore, the proposed draft was ACCEPTED by the required 12/18 super majority.

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, part of the NTCIP family of standards and profiles. The document is in the 1100-series of NTCIP document numbers, and is a Base Standard. NTCIP 1100-series Base Standards define the basic details of data handling – such as procedures and data formats.



The NTCIP 1103 defines a composite, application-layer protocol for the management of transportation equipment. The composite protocol consists of three component protocols: (1) the Internet-standard Simple Network Management Protocol (SNMP), (2) the Simple Fixed Message Protocol (SFMP), and (3) the Simple Transportation Management Protocol (STMP). These three protocols are concerned with the procedures for exchanging information as well as the format in which the information is exchanged.

All three protocols provide the same base services, but are designed for different needs. Also, the NTCIP 1103 standard defines a limited number of data elements necessary to manage these protocols.

When related to the widely known, “seven layer” ISO OSI Reference model, the three protocols in NTCIP 1103 are concerned with the upper three layers (the Application, Presentation and Session layers) in the OSI model.

From 1996 to 2004, parts of NTCIP 1103, including the definition of STMP, were defined in NTCIP 1101 (previously known as NEMA TS 3.2, STMF). However, in order to provide a more organized and modular set of standards, NTCIP 1101 was separated into three distinct standards: (1) NTCIP 1103, TMP, which includes the definition of STMP; (2) NTCIP 1102, which defines the Octet Encoding Rules (OER); and (3) NTCIP 8004, which defines the Structure and Management of Transportation Information (SMI). These three standards completely replaced NTCIP 1101 / NEMA TS 3.2. The STMP defined within NTCIP 1103 is one hundred percent consistent with the STMP definition in NTCIP 1101.

A “Trap” is an event-reporting operation in SNMP, used to report the occurrence of defined events. The Base Standards and Profiles WG did not include “Trap management” in NTCIP 1103 version v01, which was jointly approved in November 2005.

Although NTCIP 1103 v02 is a “major version” revision of the NTCIP 1103, Traps are not included in v02. NTCIP 1103 v02 does include revisions for: the referencing of the report and security node objects, use of the community-name field and security threats, an update of references to related documents, and correction of typographic errors.

Issues remain with the definition of the Trap objects and the use of Traps. The Trap mechanism may be most applicable with higher speed Ethernet communications, and less applicable with the lower speed RS-232 and FSK-connected equipment. Besides being used in actuated signal controllers, there is also potential use for Traps in TSS and DCM devices. Traps are now defined in the draft version v03, to be issued for review and comment.

DOCUMENT ORGANIZATION. The NTCIP 1103 v02 Section 2 describes the overall structure of the Transportation Management Protocols and how the three component protocols merge to form a single identifiable protocol. Section 3 provides an overview of how the Internet standard Simple Network Management Protocol (SNMP) works. Section 4 describes how the Simple Fixed Message Protocol (SFMP) enhances the concepts of SNMP in order to provide for a more compact encoding of data while still providing a simple design but with the loss of some flexibility. Section 5 describes how the Simple Transportation Management Protocol (STMP) provides for a flexible compact encoding of data but with some loss of simplicity.

NTCIP 1103 v02 Section 6 is the placeholder for the specification of "Traps" in version v03. Section 7 discusses when to use NTCIP logical names. Section 8 describes the security issues related to the TMP. Section 9 defines conformance to the standard. Annex A is normative and defines the Transportation Management Protocols Management Information Bases (MIBs). Annex B list deprecated objects. Annex C lists explains relative object identifiers. And Annex D explains the deprecation of Entry Status Type.

NTCIP 1103 v02 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 10 members, and seeks new members from both the public and private sectors.

The Standards Development Report, required by the ITE standards development process, was not available at the time this NTCIP Standards Bulletin was prepared. The SDR will be provided separately. 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 1103 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.

The report from the User Comment database is posted in the NTCIP Web site's Forum for Standards. Click to the conference for NTCIP 1103. The user comment database report includes the disposition of the comments received on the document.

NOTES. The Joint Committee e-ballot accepted NTCIP 1103 version 02.14c as the Recommended Standard. Administrative delay, waiting for the SDR, plus additional technical editing (to make version v02.16b) all postponed the issue of this Standards Bulletin.

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.

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 1103 v02.16b, *Transportation Management
Protocols (TMP) – Version 02*, ~117 pages.

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