NTCIP Standards Bulletin B0125

from the Joint AASHTO / ITE / NEMA Committee on the NTCIP

DATE: August 29, 2007

TO: AASHTO, ITE, and NEMA

SUBJECT: **User Comment Draft of NTCIP 1210,**
Field Management Stations – Part 1:
Object Definitions for Signal System Masters

ACTION: Second Request for
Distribution to Solicit User Comments

RECOMMENDATION. This Bulletin reports that the Joint Committee on the NTCIP accepted the proposed NTCIP 1210, *Field Management Stations – Part 1: Object Definitions for Signal System Masters*, as a Second User Comment Draft, and recommended to AASHTO, ITE, and NEMA that the draft be distributed to solicit user comments. The acceptance was approved by the required majority of the 18-member Joint Committee, via a roll call vote during the regularly scheduled teleconference meeting held on August 16, 2007. The vote to accept carried with 10 affirmative votes, no negative votes, and 8 absent members.

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 1200-series of NTCIP document numbers, and is a Device Data Dictionary document.

The NTCIP 1210 defines requirements for the Information Level communications interface between a management station and a Signal System Master (SSM). This is achieved through the presentation of the user needs for such an interface (in document Section 2) with detailed functional requirements (in document Section 3). NTCIP 1210 also includes references to the communications interface between the SSM and a Signal System Local (SSL).

Setting Standards for Excellence

Reviewers may want to start with Section 2, the Concept of Operations, and the Tutorial subsection. Then refer below to the "Comments from the FMS WG Chair."

NTCIP 1210 v01.46 now includes just two normative annexes – Annex A is the Requirements Traceability Matrix, and Annex B is the PRL.

NTCIP 1210 was developed by the NTCIP FMS Working Group, chaired by Rick Denney (Iteris). The FMS WG has 14 members from the public and private sectors.

NOTES. The Joint Committee on the NTCIP accepted NTCIP 1210 v01.46b as the user comment draft. The attached version v01.46c includes minor editing on the title page and notes in the list of normative references.

In February 2002, Standards Bulletin B0073 issued NTCIP 1210 v01.14 for the first round of user comments. The version v01.46, now being distributed for a second review, is a much-revised document.

Comments from the FMS WG Chair

The following notes provide a general description of the 1210 MIB to help reviewers understand some basic concepts and organization. The NTCIP Joint Committee also requested that a special note be included for reviewers of the previous, v01.14 draft in 2002.

Note to Previous Reviewers of NTCIP 1210 User Comment Draft

NTCIP 1210 v01.46 is the second User Comment Draft. The reviewers of the first User Comment Draft are recommended to review the version v01.46 as a wholly new document. Significant changes have been made that would make difficult any attempt to relate it back to the previous version, or to the previous user comments. Every attempt was made to address all the prior comments, but subsequent to the Working Group decision to return the previous draft to Working Group Draft status, further updating to the v01.14 user comment database was not performed. The WG believes that the addition of systems engineering documentation will make review of this draft much easier.

For those who reviewed the previous version, one key change in the basic design has been the removal of parameter paging, and the simplification of the Command Table. As a result, the depth of table indexing has been substantially reduced.

Document Description

The draft document includes systems engineering documentation showing traceability of the design to user needs (described in Section 2) and requirements (Section 3). Dialogs (Section 4)

have also been drafted and in particular require industry review. This process was undertaken and the documentation was added since the first User Comment Draft.

The basic approach of the standard involves two mechanisms for communication between the Signal System Master (SSM) and the Signal System Local (SSL). One is through the Command Table, which is supported by the objects in Section 5.3. The messages for use in the Command Table are described using objects in Sections 5.4 (for SNMP) and 5.5-5.6 (for STMP). The Command Table controls all communications with the local device that pertains to the operation of a signal system master.

The second approach uses PMPP routing, and supporting objects are in Section 5.7. The PMPP Routing table provides a means of passing messages to devices connected to the SSM without the SSM knowing the information being passed. The table includes the PMPP information field, and any response from the SSL. PMPP routing is a new major feature that was added since the first User Comment Draft, in support of the user need to manage local devices from a traffic management system.

All objects passed between the SSM and the SSL are defined by the appropriate SSL device standard. All objects in the 1210 MIB are defined for communication between the SSM and a traffic management system.

Within the SSM, SSL devices that are actuated signal controllers are grouped into sections. Configuration of those sections is supported in Section 5.1, and configuration of the intersections is supported in Section 5.2.

The responses from the status polling set up using the Command Table are stored in the objects in Section 5.8.

Sections 5.9 through 5.11 provide objects covering control modes and time-of-day operation (including timebase control).

Sections 5.12 through 5.19 support the processing of detector data for traffic-responsive plan selection, and also objects supporting the level selection algorithm. A description of the chain of detector processing is included at the end of Section 5.19 on page 145. For those reviewing the traffic responsive plan selection mechanism, this description is a recommended starting point to a review of the MIB.

Sections 5.20 through 5.22 support a signature pattern matching approach to plan selection.

Sections 5.23 and 5.24 support the control parameters and algorithm selection for traffic-responsive plan selection.

Finally, Section 5.25 supports the transfer of block objects, which are defined in Section 6.

Annex A provides the Requirements Traceability Matrix. Annex B provides a SSM Device and Information Profile Requirements List, organized by conformance group.

Known Issues

The FMS WG has noted three issues:

1. One user need and its associated requirements are not yet fully accommodated in the MIB. The user need in question is 2.4.1.3.3, and the associated requirements are numbered 3.4.4.3. The needed objects will provide a means of databasing volume and occupancy data collected over a user-defined time period in the signal system master for later retrieval by the traffic management system. The WG has noted this as a user comment to be addressed.

   The affected portions of the Protocol Requirements List and the Requirements Traceability Matrix have been shaded in red with an associated text note.

2. A portion of the standard accommodates exception reporting, and cannot be advanced until NTCIP 1103 v02 has been advanced to a higher stage.

3. A portion of the standard may be affected by changes to the handling of daylight savings time currently being considered in other relevant standards.

The last two items affect sections 6.29, B.12, and B.27; and are accompanied by flags from WG member Bud Kent as “Bud K Comment.”

The WG also acknowledges some issues in the dialogs, which will be addressed along with the user comments.

The MIB for 1210v01.46 has been compiled with some minor warning-level issues noted. These will also be addressed along with user comments.

The WG believes that the document represents, with due consideration of the above issues, a complete and correct standard, and is therefore ready for and in need of a wider review within the industry.

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 starting on page xi.

To use the links when browsing with Adobe® Reader®, use the Select Tool or the Hand Tool, and the tool 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.

USER COMMENT INSTRUCTIONS. People who receive this request for comments are asked to follow these instructions.

1. Refer this Standards Bulletin and the draft document to the person or persons in your organization who are most familiar with, and concerned about, traffic management and NTCIP standards. Also refer this Bulletin to anyone involved with the design, deployment, or operation and maintenance of traffic management systems, including any consultants they may use.

2. Review any portion, or all, of the user comment draft. Any comments, however general or specific, will be appreciated.

3. Email, mail, or fax your comments to this address. If you have five or more comments, an email with an attached Microsoft® Word documents is preferred.

email <ntcip@nema.org>
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4. To allow copy/paste text transfer of your comments into a user comment database, please list each of your comments separately, in the following five-part format. Or use a Word table with these column headings.

document: NTCIP 1210 v01.46c
page number:
clause or paragraph number:
comment:
suggested change:

5. Please respond by the end of the comment period as instructed by your standards organization. For NEMA, the 30-day comment period for this Bulletin will close about October 1, 2007. For AASHTO, the 30-day comment period will also close about October 1, 2007. Comments received after the closing date will be accepted, but they may not be included in the next version of the document. Please include your name and mailing address so that your comments can be acknowledged.

ATTACH-MENT: 1. NTCIP 1210, *Field Management Stations – Part 1: Object Definitions for Signal System Masters*, version 01.46c, August 2007, ~274 pages.

FROM:
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CC: Email with PDF attachment for redistribution to AASHTO and ITE staff.
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