

# NTCIP Standards Bulletin B0142

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

**DATE:** August 31, 2011

**TO:** AASHTO, ITE, and NEMA

**SUBJECT:** Recommended Standard of NTCIP 1203 v03,  
*Object Definitions for Dynamic Message Signs (DMS)*

**ACTION:** Request for Ballot to Approve

**RECOMMENDATION.** This Bulletin reports that the Joint Committee on the NTCIP accepted the proposed NTCIP 1203 v03, *Object Definitions for Dynamic Message Signs (DMS)*, Parts 1 and 2, as a Recommended Standard, and agreed to refer the document to AASHTO, ITE, and NEMA for balloting and approval.

The acceptance of 1203 v03 Parts 1 and 2 was approved by the required super majority of the 18-member Joint Committee, in e-ballot voting that ended in May 2011. The action to accept was carried with 13 affirmative votes, no negative votes, no abstentions, 4 no responses, and one vacant seat.

The NTCIP 1203 v03 Recommended Standard adds the Annex C for Test Procedures for DMS. The NTCIP 1203 v03 Annex C is delivered as a “Part 2” document because of the page count size.

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.** The balloting and approval of DMS major version v03 with Test Procedures is close-on-the-heels to the balloting of the prior major version, 1203 v02.

The prior major version 1203 v02.39 was issued for SDO balloting in November 2010. As of August 2011, NEMA approved 1203 v02 in February 2011, and ITE approved the standard in June 2011. AASHTO approval is pending.

The NTCIP 1203 v03.04 includes all of the revisions in the prior major version, the 1203 v02.39 replacement Recommended Standard.

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 1203 v03 Annex C defines test procedures consistent with NTCIP 8007 v01 and covers the entire scope of NTCIP 1203 v03. The 1203 Annex C includes tests of some of the features defined in NTCIP 1201 v03 GO, but only to the extent that these features have been incorporated by reference in NTCIP 1203 v03 DMS.

**DOCUMENT OVERVIEW.** The NTCIP 1203 v03 is organized into 6 sections and 8 annexes. The Part 1 Annex C has a note that refers to the separate Part 2 PDF file.

NTCIP 1203 v03 was drafted by the NTCIP Dynamic Message Sign Working Group, chaired by Mark Morse (Washington State DOT), with the support of a two-person consulting team.

**NOTES.** For additional tutorial and change information about 1203 v03, see these four sections in the document:

- the History — on Part 1 document pages vi;
- the Concept of Operations — on Part 1 document page 18; and
- the Annex D (Documentation of Revisions) — on Part 1 document page 297, for changes from 1203 v02 to 1203 v03.

The Joint Committee reviewed and accepted 1203 v03.03b. The title page of the Recommended Standard, and other minor edits were made, for balloting and approval, and the minor version was updated to NTCIP 1203 v03.04.

**USER COMMENT DISPOSITION.** All user comments regarding NTCIP 1203 v03 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 NTCIP 1203 v03 User Comment Report is posted at [forum.ntcip.org/~NTCIP\\_Standards/login](http://forum.ntcip.org/~NTCIP_Standards/login) in the Standards Forum for 1203. The report list the 190 comments and sub-comments.

**NAVIGATE THE PDFs.** To help users navigate the large documents, the PDF files were authored with embedded links. The links can be found in the Contents, list of Figures, and list of Tables and within the text and tables, such as the PRL.

In the Part 2 Annex C, within the Table 1 for tracing Requirements to Test Cases, the Test Case IDs and Test Case Titles link to those Test Cases.

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-  
MENT:**
1. NTCIP 1203 v03, *Object Definitions for Dynamic Message Signs (DMS)* version 03.04, May 2011, Part 1, ~330 pages.  
MAY BE SEPARATE FILE
  2. NTCIP 1203 v03, *Object Definitions for Dynamic Message Signs (DMS)* version 03.04, May 2011, Part 2, ~347 pages.  
MAY BE SEPARATE FILE
  3. ITE SDR for NTCIP 1203 v03; 8/31/2011, 5 pages.  
COMBINED IN THIS SAME PDF

**FROM:** NTCIP Coordinator  
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**CC:** Email with PDF attachment for redistribution to AASHTO and ITE staff.  
Email notification to NTCIP community via listserv reflector.  
NTCIP Web site distribution.

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## **ITE Standards Development Report (SDR) for NTCIP 1203 v03 *DMS Objects***

Date prepared: August 31, 2011  
Prepared by: Bruce Schopp, on behalf of  
  
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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 1203 v03.04, Parts 1 and 2, August 2011, RS. *National Transportation Communications for ITS Protocol Object Definitions for Dynamic Message Signs (DMS)*

To review the document, see the filenames

1203v0304 Part1 dms2011 RS.pdf, and  
1203v0304 Part2 annexC2011 RS.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	2008 to 2009. As part of the Joint AASHTO, ITE, and NEMA project proposal PP042, in response to the FHWA Work Order 11-0802, the proposal to add test procedures to the widely-deployed DMS was funded. The test procedures would use the VDOT DMS v02.25 tests, although the v03 Annex C would be based on the NTCIP 1203 v2.37. In June to September 2009, the effort was announced and consultants were evaluated and selected.
2. Committee Formed	The NTCIP DMS WG had already been formed for 1203 v01 and v02.
3. Committee Develops Draft Proposed Standard	March 2010. The NTCIP DMS WG started receiving consultant drafts of 1203 v03 Annex C revA01 test cases.
4. Committee Ballots Draft Proposed Standard	See below.
5. Standard Review Panel Ballots Draft	See below.
6. Draft Proposed Standard Approved	Between March and August 2010, NTCIP 1203 v03 Annex C was reviewed by the DMS WG, internal comments were discussed and disposed, and the NTCIP Joint Committee accepted rev A.08n as the User Comment Draft.
7. Proposed Standard Published to Solicit Comments	September 2010. NTCIP standards bulletin B0138 issued 1203 v03.01 with Annex C rev A.09 UCD for review and comment.
8. Comments Considered by Committee	Between January and March 2011, the DMS WG disposed of User Comments based on consultant recommendations, email discussion threads.
9. Committee Ballots Revised Proposed Standard	March 2011. WG Doodle polls for consensus on comment disposition for 190 rows of subcomments, with exceptions noted for UC0511, the row 154 item, and other sub-comments from a WG member. Consensus was reached to propose 1203 v03 to the JC.
10. Standard Review Panel Ballots Revised Proposed Standard	See below.
11. Revised Standard Approved	May 2010. The Joint Committee accepted NTCIP 1203 v03.03 Parts 1 and 2 as the Recommended Standard. Acceptance votes from 12 of 18 members.
12. Intent to Adopt Announced	<i>August 2011: ITE staff receives NTCIP Standards Bulletin B0142 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 3, 4, 5, 8, and 9, the Working Group held a series of meetings, on these dates and at these locations, or via teleconference:

(prior meetings were only re 1203 v02)

June 18, 2009	teleconference re v03 kickoff, included v02 recap
August 4, 2009	teleconference on consultant selection
September 10, 2009	teleconference on consultants, and subWG on v02.36
November 19, 2009	teleconference on inventory of open UCs
March 16, 2010	teleconference on scope and Annex C review
May 18 – 20, 2010	Denver, CO on C rev A.07 and walkthrough workbook
June 15, 2010	teleconference on rev A.08d TP review
August 12, 2010	teleconference on rev A.08m TP review
January 18, 2011	teleconference on UC dispositioni

**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.**

The Comments were indexed in an Access database file, and sub-comments were listed in an Excel files. To review the external user comments, internal WG comments, and other editorial revisions and dispositions, see the filename:

1203 v03 UC Disposition Report March 2011.pdf

**5. Committee objectives**

The scope and objectives of the DMS Working Group is to serve as a subdivision of the NTCIP Joint Committee, and to develop and maintain the NTCIP 1203 standards publication and other documents that define the technical specifications, and other related documentation, in the technical area of Dynamic Message Signs.

**6. List of Committee Members**

The following are active participating members of the DMS Working Group in 2011:

Mark H. Morse, DMS WG CHAIR, Washington DOT  
 Lesly Bien-Aimé, P.Eng.; R&D Manager; Signalisation Ver-Mac, Inc.  
 Russell Brookshire; Product Manager, Embedded Systems; Intelligent Devices, Inc.  
 Patrick Chan, P.E.; Senior Technical Staff; Consensus Systems Technologies, Inc.  
 Félix Cuéllar; DMS Product Engineer; McCain Traffic, Inc.  
 Gene Daigle; Traffic Software Dev. Manager; Skyline Products, Inc.  
 Terry Haukom; Traffic Mgmt System Designer; Minnesota DOT Metro Div  
 Ira Huttner; Senior Proj Mgr, Technology Services; Port Authority of NY & NJ  
 Amit Misra; Senior Research Analyst; Southwest Research Institute

Peter Ragsdale, P.Eng.; Consultant; Independent Consultant  
Robert G. Rausch, P.E.; VP Chief ITS Tech Officer; TransCore ITS, Inc.  
Joerg (Nu) Rosenbohm, Dipl.-Ing. (FH); (formerly) Intelligent Devices, Inc.;  
Ken Smith; Transportation Software Product Mgr.; Daktronics, Inc.  
Kenneth L. Vaughn; President; Trevilon Corp.  
Derek Vollmer; ITS Analyst; Florida DOT

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

Lesly Bien-Aimé, P.Eng.; R&D Manager  
Signalisation Ver-Mac, Inc.  
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Richard Chylinski; Manager, Software Systems  
Delcan Corporation  
133 Wynford Drive  
Toronto ON M3C-1K1

Milan Patel; VP Engineering  
LEDStar, Inc.  
125 Buttermill Ave.  
Concord ONT L4K 3X5

## **7. Other Material of Interest**

The NTCIP 1203 v03 defines the user needs and features, functional requirements, standardized design elements, and test procedures for dynamic message signs. The 1203 v03 was a second work item for the Joint Committee for how to add standardized test procedures to the NTCIP data dictionaries, based on NTCIP 8007.

The NTCIP 1203 v03.03 Part 2 Annex C DMS is verbose – with the table tracing from Requirements to Test Cases, and the separate tables for each Test Case, each with their own Test Procedures. The Part 2 document PDF is 347 pages long.

This standard was developed with funding assistance from the U.S. DOT / RITA / ITS JPO.

The NTCIP 1203 standard has experienced wide application, both in the U.S. and around the world.

**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.**

The DMS working group has not identified, nor examined, any other existing national standards, or non-US international standards, that can be used for the remote command and control (C2) of, and data communications interface with, message signs in roadside deployments for the surface transportation industry.

No other DMS C2 data communications standards are designed to be compatible with a public data infrastructure network. No other DMS C2 data communications describe an SNMP interface. The working group has found no significant domain intersections between NTCIP 1203 and other message display standards.

**9. Abstract of the Standard**

The NTCIP 1203 v03 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 1203 v03 defines the user needs and features, functional requirements, standardized design elements, and test procedures for dynamic message signs. The 1203 v03 has been a pilot project for how to develop better ITS standards – adding Systems Engineering (SE) content to the NTCIP data dictionaries, and adding standardized test procedures. The DMS-specific SE content defines operational concepts, functional requirements, a revised method of conformance, dialog and interface specifications, and a requirements traceability matrix. The Annex C defines test procedures consistent with NTCIP 8007 v01 and cover the entire scope of NTCIP 1203 v03. The 1203 Annex C includes tests of some of the features defined in NTCIP 1201 v03 GO, but only to the extent that these features have been incorporated by reference in NTCIP 1203 v03 DMS.

The previous NTCIP 1203 v02 document was re-organized into two parts because of page count.

**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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