

A Recommended Amendment of the Joint Committee on the NTCIP

NTCIP 1203 Amendment 1 v07

National Transportation
Communications for ITS Protocol

Object Definitions for Dynamic
Message Signs (DMS) Amendment 1

Amendment 1 v07 July 03, 2001

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This document is NTCIP 1203 Amendment 1. This document, when approved by AASHTO, ITE, and NEMA, will revise NTCIP Standards Publication NTCIP 1203:1997, version 01.15, December 1999.

When this amendment is approved, notice will be provided to previous purchasers of NTCIP 1203:1997. The approved revisions will be incorporated into NTCIP 1203:1997 as version 01.16, for a revised printed version.

The referenced clauses in NTCIP 1203:1997 are recommended for revision according to the instructions in the “dash-italic text” below.

1.2.1 Normative References

-Add the following statement after the listing:

NTCIP 1102 *National Transportation Communications for ITS Protocol – Octet Encoding Rules (OER)
– Ballot Draft*

1.3 GENERAL STATEMENTS

-Second paragraph shall be modified to read

This document including OID nodes and official extension is managed by the DMS Working Group of the NTCIP Joint Committee. Proprietary features should be defined through vendor-specific nodes or vendor-specific extensions to this MIB.

1.4 GLOSSARY OF TERMS

-Change definitions to the following

Bulb Matrix	A type of display technology where an incandescent light source is used for each pixel.
Central Control Mode	Control of the sign from the central computer. Preferred term for remote control mode.
Lamp	A light source used to illuminate the message other than on a pixel-by-pixel basis.
Pixel Service	A generic term for a periodic activation to exercise mechanical pixels. The service may or may not be enabled during the display of a particular message.
Pixel Test	A test to determine the operational status of individual pixels (i.e. stuck on, stuck off).
Remaining Message Display Time	The amount of time before the message currently being displayed is to end.

-Delete the following definition

Lamp Matrix	A type of display technology where an incandescent light source is used for each pixel.
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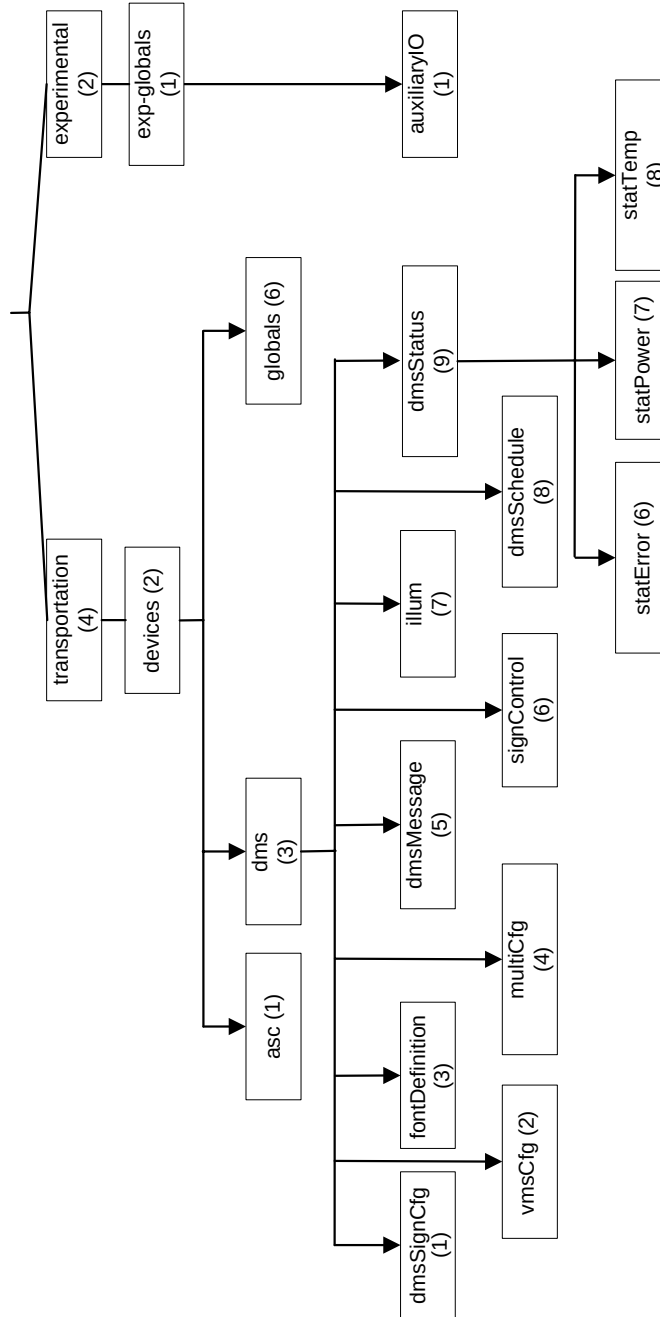
-Add the following definition

Watchdog

A circuit or device that monitors the operational status of software and/or hardware. This circuit or device resets the controller if an error is detected.

1.5 DMS OBJECT TREE

-Correct the figure to indicate that fontDefinition is (3) under dms and vmsCfg is (2) under dms in order to be consistent with the MIB definition.



2.1 DYNAMIC MESSAGE SIGNS (DMS) OBJECTS

-Change section 2.1 to the following

DMS-MIB DEFINITIONS ::= BEGIN

IMPORTS

IpAddress, Counter

FROM RFC1155-SMI

DisplayString

FROM RFC1213-MIB

OBJECT-TYPE

FROM RFC-1212

experimental

FROM NEMA_SMI

OwnerString, devices

FROM TMIB;

--For the purpose of this section, the following OBJECT IDENTIFIERS are used:

--the node location is: nema / transportation

dms OBJECT IDENTIFIER ::= {devices 3}

-- Additionally, OBJECT IDENTIFIERS for the Auxiliary objects (see section 2.7.3) which are

-- located under:

exp-global OBJECT IDENTIFIER ::= {experimental 1}

MessageIDCode ::= OCTET STRING (SIZE(5))

-- The MessageIDCode consists of those parameters required to define a

-- message within a dmsMessageTable. It is defined as an OCTET STRING containing the OER-encoding

-- of the following ASN.1 structure.

--MessageIDCodeStructure ::= SEQUENCE

-- {

-- messageMemoryType INTEGER (0..255),

-- messageNumber INTEGER (0..65535),

-- messageCRC OCTET STRING (SIZE (2))

-- }

-- The fields are defined below.

MessageActivationCode ::= OCTET STRING (SIZE(12))

-- The MessageActivationCode consists of those parameters required to activate a

-- message on a DMS. It is defined as an OCTET STRING containing the OER-encoding

-- of the following ASN.1 structure.

--MessageActivationCodeStructure ::= SEQUENCE

-- {

-- duration INTEGER (0..65535),

-- activatePriority INTEGER (0..255),

-- messageMemoryType INTEGER (0..255),

-- messageNumber INTEGER (0..65535),

-- messageCRC OCTET STRING (SIZE (2)),

-- sourceAddress OCTET STRING (SIZE (4))

-- }

-- Duration (16 bits) shall indicate the maximum amount of time, in minutes, the message may be displayed prior to activating the dmsDefaultEndDurationMessage. dmsMsgTimeRemaining shall be set to this value upon successful display of the indicated message. A Value of 65535 shall indicate an infinite duration.

--

-- activatePriority (8 bits) shall indicate the Activation Priority of the message. If this value is greater than or equal to the dmsMsgRunTimePriority of the currently displayed message, the new message shall be displayed unless errors are detected.

--

-- messageMemoryType (8 bits) shall indicate the dmsMsgMemoryType of the desired message.

--

-- messageNumber (16 bits) shall indicate the dmsMsgNumber of the desired message.

--

-- messageCRC (16 bits) shall indicate the dmsMsgMessageCRC of the desired message.

--

-- sourceAddress (32 bits) shall indicate the 4-byte IP address of the device which requested the activation.

--

-- The dmsActivateMsgError object shall be used to indicate the success or failure of activating any message requested by an object with a SYNTAX of MessageActivationCode.

--

-- Three special conditions exist with the MessageActivationCode and MessageIDCode structures.

-- The first condition is related to blanking the sign. A blank sign is activated by setting the MsgMemoryType to 'blank' and the MessageNumber to the desired run time priority. Note that these are actual entries into the message table, but there are only 255 blank messages (because there are only 255 priority levels) and therefore the high-order byte of the MessageNumber field shall always be 0x00. Further, to minimize errors in attempting to blank the sign, the CRC for all blank messages shall be 0x0000.

--

-- The second condition is related to operating the scheduler. The scheduler is activated in a fashion similar to other messages. The dmsMessageMemoryType is set to 'schedule' (value of 6), the MessageNumber is set to '1', and the MessageCRC is set to 0x0000. The schedule has a run-time priority, as defined by dmsRunTimePriority.6.1, that overrides the run-time priority of the called message. Thus, the run-time priority is constant for all scheduled messages and the central system can set this priority by modifying the value of dmsRunTimePriority.6.1. If an invalid message code is received, the sign will continue operations as if the code was not received, after the correct response is transmitted.

-- The third special condition pertains to selecting the currently displayed message. This condition is only valid for the 'MessageIDCode' SYNTAX, not for the 'MessageActivationCode' SYNTAX. Specifying the currentBuffer 5.1 within the MessageMemoryType and MessageNumber fields of the 'MessageIDCode' SYNTAX will be used within default messages such as dmsShortPowerRecoveryMessage. This allows a message that was running prior to a power loss to run after the power loss without changing the contents of dmsShortPowerRecoveryMessage every time the activateMessage is changed. The messageCRC field of the default messages (such as dmsShortPowerRecoveryMessage) shall be 0x0000, when the messageMemoryType field has a value of 'currentBuffer'.

2.2.1.1.1.1 Sign Access Parameter

-Add the following to the end of the DESCRIPTION field

If a bit is set to one (1), then the associated feature exists; if the bit is set to zero (0), then the associated feature does not exist.