

**A Recommended Amendment to TS 3.2 - 1996
of the Joint Committee on the NTCIP
for Joint Adoption by AASHTO, ITE, and NEMA**

**NEMA Standards Publication TS 3.2-1996
– Amendment 1**

*National Transportation Communications for ITS Protocol
(NTCIP)
Simple Transportation Management Framework*

Draft Version 98.01.08 November 2, 1998

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Published by

American Association of State Highway and Transportation Officials (AASHTO)
444 North Capitol St., N.W., Suite 249
Washington, D.C. 20001

Institute of Transportation Engineers (ITE)
525 School St., S.W., Suite 410
Washington, D.C. 20024-2797

National Electrical Manufacturers Association (NEMA)

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1.2 REFERENCES

- Add the following paragraphs to the top of this clause:

For approved revisions, contact:

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For draft revisions, which are under discussion by the relevant NTCIP Working Group, and recommended revisions of the NTCIP Joint Committee, visit the World Wide Web at <http://www.ntcip.org>.

1.2.1 Normative References

- Replace the references to the Internet RFCs with:

IAB STD 15 (RFC 1157) *Simple Network Management Protocol*, J. Case, M. Fedor, M. Schoffstall, J. Davin, May 1990

IAB STD 16 (RFC 1155) *Structure and Identification of Management Information for TCP/IP based Internets*, M. Rose, K. McCloghrie, May 1990, (RFC 1212) *Concise MIB Definitions*, M. Rose and K. McCloghrie, March 1991

1.4 ABBREVIATIONS AND ACRONYMS

- Delete the PER acronym as it is no longer referenced.

- Add the following acronym to the list.

OER —Octet Encoding Rules, a variation of BER developed for use on low bandwidth communications links, specified in this Standards Publication.

3.2 THE NEMA AUTHORITY

- Change the words "mgmt", "experimental", and "private" to "nemaMgmt", "nemaExperimental", and "nemaPrivate" in Figure 3-1.

3.3 STRUCTURE AND IDENTIFICATION OF MANAGEMENT INFORMATION

- Modify the words "mgmt", "experimental", and "private" to "nemaMgmt", "nemaExperimental", and "nemaPrivate" throughout the Clause when they reference to the nodes under the nema node.

SECTION 4

- Replace the term "TMIB" with the term "TMIB-II" throughout this Section.

- Modify the first paragraph to read:

The Transportation MIB version 2 (TMIB-II) provides a framework for organizing and identifying information in locating objects for transportation specific equipment. The TMIB-II is located under the *nema* node of the global object tree. This MIB is controlled by NEMA Transportation Management Systems and Associated Control Devices Section (3-TS). NEMA 3-TS may designate subnodes of the TMIB-II to be administered by other groups or organizations.

4.1.1 Byte and UByte Types

- Change the lower limit of the Byte from -127 to -128.

4.1.2 Short and UShort Types

- Change the lower limit of the Short from -32767 to -32768.

4.1.3 Long and ULong Types

- Change the lower limit of the Long from -2147483647 to -2147483648

4.1.4 EntryStatus Type

- Change the Clause title to "*ConfigEntryStatus Type*".

- Replace all of the text in this Clause with the following:

The *EntryStatus* Type, as defined in TMIB(-I), has been replaced with the *ConfigEntryStatus* type in TMIB-II. The *ConfigEntryStatus* type shall be used to manage the *dynObjDef*(Table) that allows new rows to be created by management applications running remotely. For each row in the *dynObjConfigTable* there shall be a columnar object that is defined with a SYNTAX of *ConfigEntryStatus* (e.g., see dynamic object configuration table in 4.2). *ConfigEntryStatus* shall be an enumerated INTEGER that can have one of three values: *valid*, *underCreation* and *invalid*.

Other objects in the row shall have operations limited by the current value of the *EntryStatus* object in the row. The meaning of the values is as follows:

If the status object is *invalid* then the information in the corresponding rows of the *dynObjDef*(Table) with the same index *dynObjNumber* shall be considered undefined. Setting the status object to *invalid* has the effect of invalidating the corresponding rows. It is implementation specific whether the agent clears the values contained in an invalidated row, de-allocates the memory associated with invalidated rows, or simply leaves the last values within the row. When in the *invalid* state, the agent shall reject any request to go to the *valid* state.

The *underCreation* state shall indicate that the memory for the corresponding rows of the *dynObjDef*(Table) with the same index *dynObjNumber* is allocated, but may contain some invalid data. When in this state, the management application is allowed to modify the values of the objects contained in the associated rows of the table. Once this operation is completed, the management station may set the state to *valid*; alternatively, the management station may cancel the operation by setting the state to *invalid*. If the agent determines that an entry has been in the *underCreation* state for an abnormally long time, it may set this object to *invalid*.

The *valid* state shall indicate that the corresponding rows of the *dynObjDef*(Table) with the same index *dynObjNumber* contain information that is believed to be *valid*.

The following table indicates the actions that shall take place upon receipt of a set request to change the state of the corresponding rows of the dynObjDef(Table) with the same index *dynObjNumber*. The value of each cell in the table shows the result of receiving the indicated set request (column headings) when the device is in the indicated state (row headings).

Table 1 -- State Transition Table

		COMMANDED STATE		
		<i>invalid</i>	<i>underCreation</i>	<i>valid</i>
CURENET STATE	<i>invalid</i>	invalid (1)	underCreation (1)	invalid (3)
	<i>underCreation</i>	invalid (2)	underCreation (3)	valid (4) or underCreation (5)
	<i>valid</i>	invalid (2)	valid (3)	valid (1)

Notes:

- (1) no action takes place and response indicates noError.
- (2) all entries associated with the ConfigEntryStatus object are deleted or de-referenced and response indicates noError
- (3) no action takes place but response indicates badValue.
- (4) if consistency check succeeds then state changes to *valid* and response indicates noError.
- (5) if consistency check fails then state remains *underCreation* and response indicates genErr.

Upon receipt of set request for the *valid* state when in the *underCreation* state, the agent shall perform a consistency check on the data contained in the associated rows of the dynObjDef(Table) with the same index *dynObjNumber* of the table. If the consistency check is successful, the state shall change to *valid*, otherwise, the state remains in the *underCreation* state and the device shall return a genErr.

4.2 STRUCTURE OF TRANSPORTATION MANAGEMENT INFORMATION

- Modify the second full paragraph to read:

The TMIB-II shall have ~~two~~three nodes located under the *transportation* node. The *protocols* node shall be the beginning of a subtree that holds information about various communications protocols. The *devices* node shall be the beginning of a subtree that holds information about various standard transportation device objects. The *tcip* node shall be the beginning of a subtree that holds information about various standard transit objects. The ASN.1 notation for these ~~two~~three nodes shall be defined as:

- Add the following definition to the end of this Clause:

tcip OBJECT IDENTIFIER ::= { transportation 3 }

4.2.1.1 Dynamic Object Management (dynObjMgmt)

- Modify the first paragraph to read:

The *dynObjMgmt* subtree is used by the STMP to reduce the bandwidth requirements of communicating sets of objects between a management station and agents. The *dynObjMgmt* tree contains ~~two~~three nodes: *dynObjDef*, ~~and *dynObjData*, and *dynObjConfigTable*.~~ All of the nodes under *dynObjData* have been deprecated.

- Modify the figure to the following: