



August 2002

NTCIP 1400 Transit Communications Interface Profiles (TCIP) Framework Standard

Overview

The Transit Communications Interface Profiles (TCIP) is a family of standards that specifies the rules and terms for the automated exchange of information in transit applications such as operations, maintenance, planning, management, and customer services. TCIP standards define the information and information-transfer requirements among public transportation vehicles (PTVs), transit management centers (TrMCs), other transit facilities, and ITS centers. TCIP standards also identify mechanical and electrical interfaces (physical layer) and methods for ensuring data integrity (data-link layer), specify required message sets, and provide a common set of conformance requirements.

This standard, **NTCIP 1400, TCIP Framework Standard**, provides the basic concepts necessary for conveying transit application information (data) among a variety of users, such as transit organizations, emergency response services, regional traffic management centers, and other related entities.

What is this standard for?

This standard, **NTCIP 1400, TCIP Framework Standard**, defines a transit classification scheme, naming conventions, rules for identification of data elements and messages, guidance on the use of the ASN.1 syntax, and levels of conformance for all TCIP standards. It covers data used to carry out public transportation operations, service, and planning. It pertains to all data that is sent or received in transit business areas such as fare collection (FC), scheduling/runcutting (SCH), passenger information (PI), incident management (IM), onboard (OB), transit control center (CC), and traffic management (TM). Other transit business areas that support or cut across these business areas are also included, for example spatial representation (SP) and common public transportation (CPT).

Who uses it?

This standard is used by transit managers, software vendors, and procurement personnel involved in the specification, selection, procurement, installation, operation, and maintenance of electronic transit applications. Fare collection, incident management, bus traffic management, on-board systems, passenger information, scheduling and runcutting, and transit control centers are examples of transit applications for which transit professionals, vendors, and others would use this standard.

How is it used?

This standard is used as an introduction to and an overview of the TCIP family of standards. It serves as a solid foundation to understand and use related, more specialized standards in the TCIP family.

Scope

This document describes the background, basic concepts, and conformance requirements that apply to all TCIP business-area requirements. It also defines the framework for the transit business area data elements that are supported by TCIP standards, which constitute the transit component of the broader National Transportation Communications for ITS Protocol (NTCIP) group of standards.

The NTCIP family of standards is a joint project of the following standards development organizations:

**American Association of State Highway and
Transportation Officials (AASHTO)**

Institute of Transportation Engineers (ITE)

**National Electrical Manufacturers Association
(NEMA)**

(Contact information is shown at the end of this fact
sheet)

To obtain a copy of this standard, please contact:
Global Engineering Documents
Web site: <http://global.ihs.com>

Publication Date: January 2002

Related documents

ISO/IEC 8824: 1994 – Abstract Syntax Notation One (ASN.1)

[IEEE Std 1488-2000 – Trial Use Standard for Message Set Template for Intelligent Transportation Systems](#)

[IEEE Std 1489-1999 – Standard for Data Dictionaries for Intelligent Transportation Systems](#)

[NTCIP 1401 – Transit Communications Interface Profiles \(TCIP\) Common Public Transportation \(CPT\) Objects](#)

[NTCIP 1402 – Transit Communications Interface Profiles \(TCIP\) Incident Management \(IM\) Business Area Standard](#)

[NTCIP 1403 – Transit Communications Interface Profiles \(TCIP\) Passenger Information \(PI\) Business Area Standard](#)

[NTCIP 1404 – Transit Communications Interface Profiles \(TCIP\) Scheduling \(SCH\) Business Area Standard](#)

[NTCIP 1405 – Transit Communications Interface Profiles \(TCIP\) Spatial Representation \(SP\) Business Area Standard](#)

[NTCIP 1406 – Transit Communications Interface Profiles \(TCIP\) On-Board \(OB\) Objects](#)

[NTCIP 1408 -- Transit Communications Interface Profiles \(TCIP\) Fare Collection \(FC\) Objects](#)

[TS 3.TM – Transit Communications Interface Profiles \(TCIP\) Standard on Traffic Management \(TM\) Objects](#)

[NTCIP 8003 -- National Transportation Communications for ITS Protocol \(NTCIP\) Framework and Classification of Profiles](#)

[SAE J1587 – Joint SAE/TMC Recommended Practice for Electronic Data Interchange between Microcomputer Systems in Heavy Duty Vehicle Applications](#)

**American Association of State
Highway and Transportation
Officials (AASHTO)**

444 N. Capitol Street, NW
Washington, DC 20001
Tel: (202) 624-5800 Fax: (202) 624-5806
Web site: www.aashto.org

**Institute of Transportation Engineers
(ITE)**

1099 14th Street NW Suite 300 West
Washington, DC 20005
Tel: (202) 289-0222 x 131
Fax: (202) 289-7722
Web site: www.ite.org

**National Electrical Manufacturers
Association (NEMA)**

1300 North 17th Street
Arlington, VA 22209
Tel: (703) 841-3200 Fax: (703) 841-3300
Web site: www.nema.org