



U.S. Department of  
Transportation



## Intelligent Transportation Systems Standards Fact Sheet

### NTCIP 1401

August 2002

## Transit Communications Interface Profiles (TCIP) Common Public Transportation Business Area 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 1401, TCIP Common Public Transportation Business Area Standard**, defines the common public transportation data elements (called “objects”) and messages that are used by other business areas of the TCIP. The data elements within this standard include the core set of infrastructure data elements for vehicles, employees, facilities, and other transit assets.

### What is this standard for?

Common public transportation business area objects in this standard support all TCIP business areas and are used to meet the common communication requirements of those business areas. The data elements and messages established by this standard support core transit business needs.

### Who uses it?

This standard is intended for use by transit managers, software vendors, and procurement personnel involved in the specification, selection, procurement, installation, operation, or maintenance of electronic transit passenger information applications. In addition, information service providers (ISPs) will use this standard for a variety of traveler information services.

### How is it used?

This standard is used in conjunction with the TCIP Framework Standard (NTCIP 1400) and with other TCIP business area standards. The other TCIP business standards provide the domain-specific data elements that must be used in conjunction with this standard. The Framework Standard organizes the information and data transfer requirements among public transportation vehicles, transit management centers, transit facilities, and other ITS centers. It also identifies physical and data link requirements, develops required message sets, and establishes liaison between the Institute of Transportation Engineers (ITE) and other standards development organizations (SDOs).

### 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](#)

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: December 2000

IEEE Std 1489-1999 – Standard for Data Dictionaries for Intelligent Transportation Systems

NTCIP 1400 – Transit Communications Interface Profiles (TCIP) Framework 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 1407 -- Transit Communications Interface Profiles (TCIP) Control Center (CC) Business Area Standard

**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](http://www.aashto.org)

**Institute of Transportation Engineers  
(ITE)**

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

**National Electrical Manufacturers  
Association (NEMA)**

1300 North 17<sup>th</sup> Street  
Arlington, VA 22209  
Tel: (703) 841-3200 Fax: (703) 841-3300  
Web site: [www.nema.org](http://www.nema.org)