



U.S. Department of
Transportation



Intelligent Transportation Systems Standards Fact Sheet

NTCIP 1407

August 2002

Transit Communications Interface Profiles (TCIP) Control Center Business Area Standard

Overview

Transit Communications Interface Profiles (TCIP) is a family of standards that specifies the rules and terms for the automated exchange 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 1407, TCIP Control Center Business Area Standard**, defines the data needs of the functions related to control center (transit management center) applications and describes the semantics (descriptions of words and symbols) and data elements (called “objects”) for control center systems.

The control center business area has several subsystems within it, including on-board control, fare collection management, transit garage management, dispatch/operations management, communications management, performance monitoring, and general transit management.

What is this standard for?

This standard supports the transit control center business area function. The control center function involves various components and systems within public transportation management center operations. In general, a control center (or transit management center) acts as the clearinghouse for all operations and data-related processing to provide, monitor and measure transit revenue services in real time. The control center concept merges various tasks performed by numerous individuals into a single logical function. Moreover, through electronic control and network connectivity, computer aided dispatch (CAD) operators may control many of the functions aboard the transit vehicle (or advise the driver to perform those functions).

The control center business area also provides information on service and fleet performance, both in real time and in summary form, to information service providers (ISP), traffic management centers (TMC), and other transit management systems. It receives scheduling, routing, and other operations-related information (both planned and actual) from the scheduling function and the transit garage operations management function. Finally, this business area manages radio communications between fixed and mobile radio units.

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 applications for transit control and management centers.

How is it used?

This standard provides a list of objects (data elements) and messages necessary for conducting control center or transit management operations. It must be used in conjunction with the TCIP Framework Standard (NTCIP 1400). The TCIP Framework Standard organizes the information and data transfer requirements among public transportation vehicles, transit

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>

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management centers, transit facilities, and other ITS centers. The Framework Standard also identifies physical and data link communication requirements, develops required message sets, and establishes a 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 1473-1999 – Standard for Communication Protocol on Trains

IEEE Std 1474.1-1999 – Standard for Communications-Based Train Control (CBTC) Performance and Functional Requirements

IEEE Std 1475-1999 – Standard for the Functioning of and Interfaces among Propulsion, Friction Brake and Train-borne Control Master Control on Rapid Rail Transit Vehicles

IEEE Std 1476-2000 – Standard for Passenger Train Auxiliary Power Systems Interfaces

IEEE Std 1477-1998 – Standard for Passenger Information System for Rail Transit Vehicles

IEEE P1477.1 -- Draft Standard for Passenger Information System for Rail Transit Vehicles - Logical Interfaces

IEEE P1478 -- Draft Environmental Standards for Rail Transit Equipment

IEEE P1482 -- Draft Standard for Rail Vehicle Monitoring and Diagnostic Systems

IEEE Std 1482.1-1999 – Standard for Rail Transit Vehicle Event Recorders

IEEE Std 1483-2000 – Standard for Verification of Vital Functions in Processor-Based Systems Used in Rail Transit Control

[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 1400 -- Transit Communications Interface Profile \(TCIP\) Framework Standard](#)

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

[NTCIP 1404 -- Transit Communications Interface Profiles \(TCIP\) Scheduling and Runcutting \(SCH\) 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 \(OB\) Business Area Standard](#)

SAE J1455 – Joint SAE/TMC Recommended Environmental Practices for Electronic Equipment Design (Heavy-Duty Trucks)

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

[SAE J1708 – Serial Data Communications between Microcomputer Systems in Heavy-Duty Vehicle Applications](#)

VDV Standard 420 – Technical Requirements for Automatic Vehicle Location/Control Systems - Radio Data Transmission (German Association of Transport Operators)

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