



U.S. Department of
Transportation

Intelligent Transportation Systems Standards Fact Sheet



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NTCIP 2305 (Draft) National Transportation Communications for ITS Protocol (NTCIP) – Application Profile for Common Object Request Broker Architecture (CORBA)

Overview

The National Transportation Communications for Intelligent Transportation System (ITS) Protocol (NTCIP) is a family of standards that provides both the rules for communicating (called protocols) and the vocabulary (called objects) necessary to allow electronic traffic control equipment from different manufacturers to operate with each other as a system. The NTCIP is the first set of standards for the transportation industry that allows traffic control systems to be built using a “mix and match” approach with equipment from different manufacturers. Therefore, NTCIP standards reduce the need for reliance on specific equipment vendors and customized one-of-a-kind software. To assure both manufacturer and user community support, NTCIP is a joint product of the National Electronics Manufacturers Association (NEMA), the American Association of State Highway and Transportation Officials (AASHTO), and the Institute of Transportation Engineers (ITE).

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)

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For current information on the status of this standard, check the Web site at the bottom of this page.

Human communications—the exchange of ideas and information—relies on rules of etiquette to enable the members of a conversation group to communicate in an orderly manner. Computer communication—the exchange of data and information—relies on a similar set of rules called “protocols” that allow computers to exchange information. Just as different rules of etiquette apply to small and large groups and differing communications media, NTCIP establishes sets of differing protocols (called profiles) suited to specific networked and non-networked communications needs.

What is this standard for?

This standard, **NTCIP 2305 – Application Profile for Common Object Request Broker Architecture (CORBA)**, is one of two center-to-center protocols defined by the NTCIP, the other being NTCIP 2304 – Application Profile for Data Exchange ASN.1 (DATEX). It is a general-purpose protocol for object-oriented software packages that allows systems from different manufacturers to exchange data and interoperate with each other, specifying how CORBA is to be used for center-to-center communications for transportation information within the United States.

CORBA is an international standard developed by a broad consortium of information technology companies known as the Object Management Group (OMG). CORBA specifications published by the OMG permit various options; if different traffic or transit management centers were to select different options, it could lead to a failure to interoperate, though both are using CORBA. This standard ensures that all implementations of CORBA within the United States use the same base options and can therefore be made interoperable. It also provides a checklist of other CORBA options for the use of system planners.

Who uses it?

This standard is used by planners and deployers of transportation-related center-to-center communications. It is particularly useful for those responsible for preparing specifications or requirements for center-to-center communications implementation. In addition, those responsible for supplying CORBA-based software in the United States should use this document for base requirements.

How is it used?

Users refer to this standard to determine which CORBA options are requirements for use in ITS center-to-center communications. Among other things, it specifies which of the CORBA services are to be supported and which version of CORBA to use. The document also provides a “profile requirements list,” which is a checklist that can be used to choose between the various secondary options allowed by CORBA. The format of this checklist enables the user to see the interdependencies among options so that the correct options can be chosen.

Scope

This standard serves primarily as a pointer to detailed requirements in other CORBA standards published by the OMG. In addition to introductory material, it contains information on conformance and a profile requirements list.

Related documents

A detailed list of related documents is available on the [NTCIP 9001 – NTCIP Guide](#) fact sheet. (The NTCIP Guide is also available on-line at www.ntcip.org). Additional CORBA documentation and information is available at www.omg.org, or in the following documents:

The Common Object Request Broker: Architecture and Specifications, The Object Management Group, Inc., July 1995, revised October 7, 1999 (CORBA version 2.3)

Common Facilities Architecture, The Object Management Group, Inc., November 1995, revised November 6, 1997

CORBA Services: Common Object Services Specifications, The Object Management Group, Inc., 1995, revised December 9, 1998

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