A Joint Information Management Policy of AASHTO, ITE, and NEMA

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National Transportation Communications for ITS Protocol

Profile Framework

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FOREWORD

This document uses only metric units.

This document is an NTCIP Process, Control, and Information Management Policy document. Process, Control, and Information Management Policy documents define the practices and policies used by the Joint Committee on the NTCIP in developing and maintaining NTCIP standards and documents. PCIMP documents are approved for publication by AASHTO, ITE, and NEMA after recommendation by the Joint Committee on the NTCIP.

The text includes mandatory requirements in Annex A that are defined as normative.

For more information about NTCIP standards, visit the NTCIP Web Site at http://www.ntcip.org. For a hardcopy summary of NTCIP information, contact the NTCIP Coordinator at the address below.

In preparation of this NTCIP document, input of users and other interested parties was sought and evaluated. Inquiries, comments, and proposed or recommended revisions should be submitted to:

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Approvals

This document was separately balloted and approved by AASHTO, ITE, and NEMA after recommendation by the Joint Committee on the NTCIP. Each organization has approved this standard as the following standard type, as of the date:

AASHTO – AASHTO Policy; May 2000
ITE – Informational Report; May 2001
NEMA – Authorized Engineering Information; May 2001

History

From 1997 to 1999, this document was referenced as TS 3.PRO. However, to provide an organized numbering scheme for the NTCIP documents, this document is now referenced as NTCIP 8003. The technical specifications of NTCIP 8003 are identical to the former reference, except as noted in the development history below:

TS 3.PRO v97.01.08. December 1997 – Accepted as a User Comment Draft by the Joint Committee on the NTCIP.

NTCIP 8003 v01.07. July 1999 – Version 01.05 accepted as a Recommended Standard by the Joint Committee on the NTCIP. In January 2000, the NTCIP Standards Bulletin B0047 reported that typographic corrections were included in v01.06. Approved by AASHTO in May 2000. Version 01.07 approved by ITE and NEMA in May 2001 after disposition of a Letter Ballot comment.

NTCIP 8003 v01.08. December 2001 – Reformatted for printing: incremented version number and updated date; modified and reorganized front matter to conform to NTCIP 8002; updated headers, footers, and page numbers.

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INTRODUCTION

The context of the NTCIP is one part of the Intelligent Transportation Systems standardization activities covering base standards, profiles, and registration mechanisms.

- Base Standards define procedures and rules for providing the fundamental operations associated with communications and information that is exchanged over fixed-point communications links.

- Profiles define subsets or combinations of base standards used to provide specific functions or services. Profiles prescribe particular subsets or options available in base standards necessary for accomplishing a particular function or service. This provides a basis for the development of uniform, nationally recognized conformance.

- Registration Mechanisms provide a means to specify and uniquely identify detailed parameters within the framework of base standards and/or profiles.

The Profiles Working Group is concerned with the methodology of defining profiles and their documentation in Standards Publications. The purpose of this standard is to provide the principles and a classification scheme for the development of NTCIP profiles. This standard also defines aspects of the formatting and technical content of profiles that conform to this standard. The objective is to facilitate the specification of ITS characterized by a high degree of interoperability and interchangeability of its components.

In 1992, the NEMA 3-TS Transportation Management Systems and Associated Control Devices Section began the effort to develop the NTCIP. Under the guidance of the Federal Highway Administration's NTCIP Steering Group, the NEMA effort was expanded to include the development of communications standards for all transportation field devices that could be used in an ITS network.

In September 1996, an agreement was executed among AASHTO, ITE, and NEMA to jointly develop, approve, and maintain the NTCIP standards. In August 1997, the Joint Committee on the NTCIP formed a new working group to develop a method for organizing class profiles. The Profiles WG first met in September 1997.

After research into how national and international standards organizations combine protocols and standards to address all seven layers of the ISO-OSI Reference Model, the committee adopted the approach defined in the *NTCIP Profile Framework.* Following that approach, a protocol stack is specified by application, transport, and subnetwork profiles. An application profile addresses the application, presentation, and session layers. A transport profile addresses the transport and network layers. A subnetwork profile addresses the data link and physical layers.

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CONTENTS

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Section 1
GENERAL

1.1 SCOPE

This standard is applicable to traffic control and transportation related devices which must operate in an Integrated Transportation System. This standard develops the terminology, content, structure, and organization of standardized profiles.

1.2 REFERENCES

For approved amendments, contact:

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For draft amendments of this document, 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.

The following documents and standards may provide a more complete understanding of the structure and use of profiles.

Guide to Open System Specifications - The Taxonomy of Profiles, European Workshop for Open Systems, http://www.ewos.be/common/taxonmy.htm, February 16, 1999

Guide to Open Systems Specification - Conformance, Interoperability and Testing, European Workshop for Open Systems, http://www.ewos.be/ct/eguide.htm, February 16, 1999

US-Department of Defense Internet Related Standardized Profiles Index, DISA Internet Librarian, http://www-library.itsi.disa.mil/org/mil_std.html, October 31, 1997

American National Standards Institute (ANSI)
11 West 42nd Street, 13th Floor
New York, NY 10036

ISO/IEC TR 10000-1:1995 *Information Technology—Framework and Taxonomy of International Standardized Profiles -- Part 1: General Principles and Documentation Framework*

ISO/IEC TR 10000-2:1995 *Information Technology—Framework and Taxonomy of International Standardized Profiles -- Part 2: Principles and Taxonomy for OSI profiles*