National Transportation Communications for ITS Protocol (NTCIP) Update

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NTCIP Project Organization

US DOT RITA ITS JPO

SAE

AASHTO

ITE

1996 MOU

NTCIP Coord

NEMATech

ITE

ITE

ITE

NEMA

VP NEMATech

Dept. VPs

Program & Industry Dir

NTCIP Proj Mgr

Joint Committee on the NTCIP

funding

funding

appoint 6 members

appoint 6 members

3-TS Transportation Section
(~20 member companies)

GR Committee

TCS TC

DMS TC

PTS TC

Systems TC

Detectors TC

Project mgmt

other Sections

Working Groups

TCF

14

appoint 6 members

1996 MOU
NTCIP Center-to-Field Standards

Master Station

Traffic Management Center

Actuated Signal Controllers
- ASC
- ESS

CCTV Cameras & Switches
- CCTV
- DMS

Data Collection & Monitoring
- DCM
- ELMS

Traffic Sensor Systems
- TSS
- SCP

Field Masters
- FM

Agent – Field Device

Environmental Sensor Stations
Dynamic Message Signs
Electrical Lighting Management Systems
Signal Control Priority
Navigating C2F Framework

Center-to-Center
- ITS Data Model
- Reference Model
  - Information Level
    - XML
    - DATEX
  - Application Level
    - TCP
    - UDP
  - Transport Level
    - ATM
    - SONET
    - Fiber
    - Coax
    - Twisted Pair
    - Telco Line
    - Wireless

Functional Area Data Dictionaries: 1201+12xx
- ITS Messages (SOAP / XML)
- XML Files
  - SNMP
  - TRAPS
  - STMP

Dynamic Objects
  - Information Level
NTCIP Standards Framework

- Information
  - Application
  - Presentation
  - Session
  - Transport
  - Network
  - Data Link
  - Physical

- Information Level
- Application Level
- Transport Level
- Subnetwork Level

Subject matter data dictionaries such as NTCIP 1201, 1202, etc.

- NTCIP 2301-AP-STMF
- Defines: STMP/SNMP
- NTCIP 1103
- NTCIP 2302-AP-TFTP
- NTCIP 2303-AP-FTP

- NTCIP 2201-PT-NULL TT
- NTCIP 2202-TP-INTERNET

- NTCIP 2101-SP-PMPP/RS 232
- NTCIP 2102-SP-PMPP/FSK
- NTCIP 2103-SPPPP/RS232
- NTCIP 2104-SP-Ethernet
NEMA Transportation Standards

NEMA TS 2-2003 - Traffic Controller Assemblies with NTCIP Requirements, version 02.06.
www.nema.org/stds/ts2.cfm

NEMA TS 4-2005 - Hardware Standards for Dynamic Message Signs (DMS)
plus TS 4-2005 Conformance Table www.nema.org/stds/ts4.cfm

NEMA TS 5 – DRAFT – Portable Traffic Signal Control Systems
NTCIP Country Deployment

Canada – strong for signs

South Africa – Strong NTCIP (Prepared for 2010 World Cup)
Johannesburg Road Agency
- All NTCIP signs, upgrade of 1,800 traffic controllers to NTCIP

New Zealand -- Competitive sign industry – Multiple NTCIP Suppliers

China – Beijing Traffic System, Hong Kong Tunnel
Venezuela – Signs
Greece – Olympic Traffic System