

A01. IMPROVING DATA COLLECTION

**Status of the NTCIP DCM Workgroup
Effort**

presented by

Rick Stalowski (DCM WG Chair)

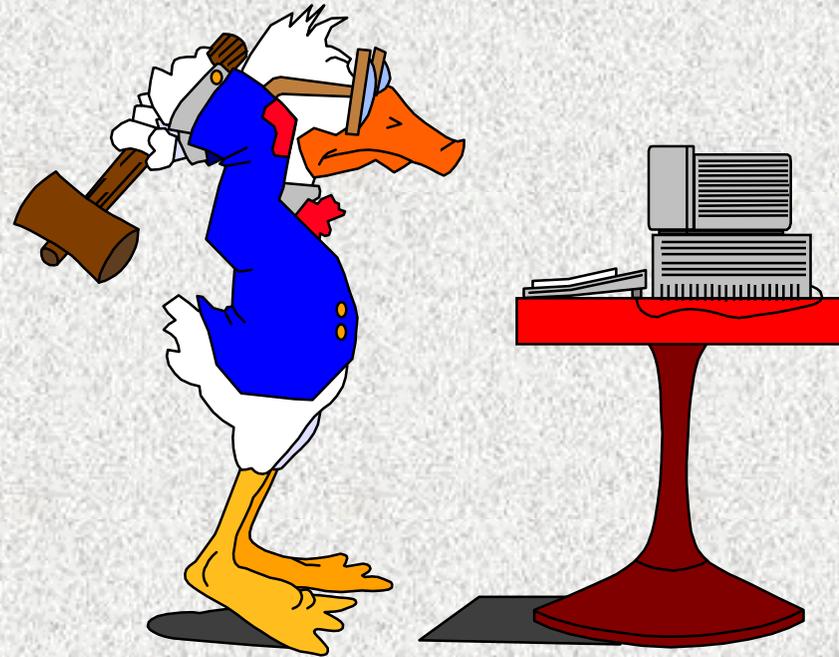


FIRST, SOME ACRONYMS

- ❑ **NTCIP = National Transportation Communications for ITS Protocol**
- ❑ **DCM = Data Collection and Monitoring**
- ❑ **SNMP = Simple Network Management Protocol**
- ❑ **FTP = File Transfer Protocol**
- ❑ **PPP = Point-to-Point Protocol**
- ❑ **ASN.1 = Abstract Syntax Notation 1**

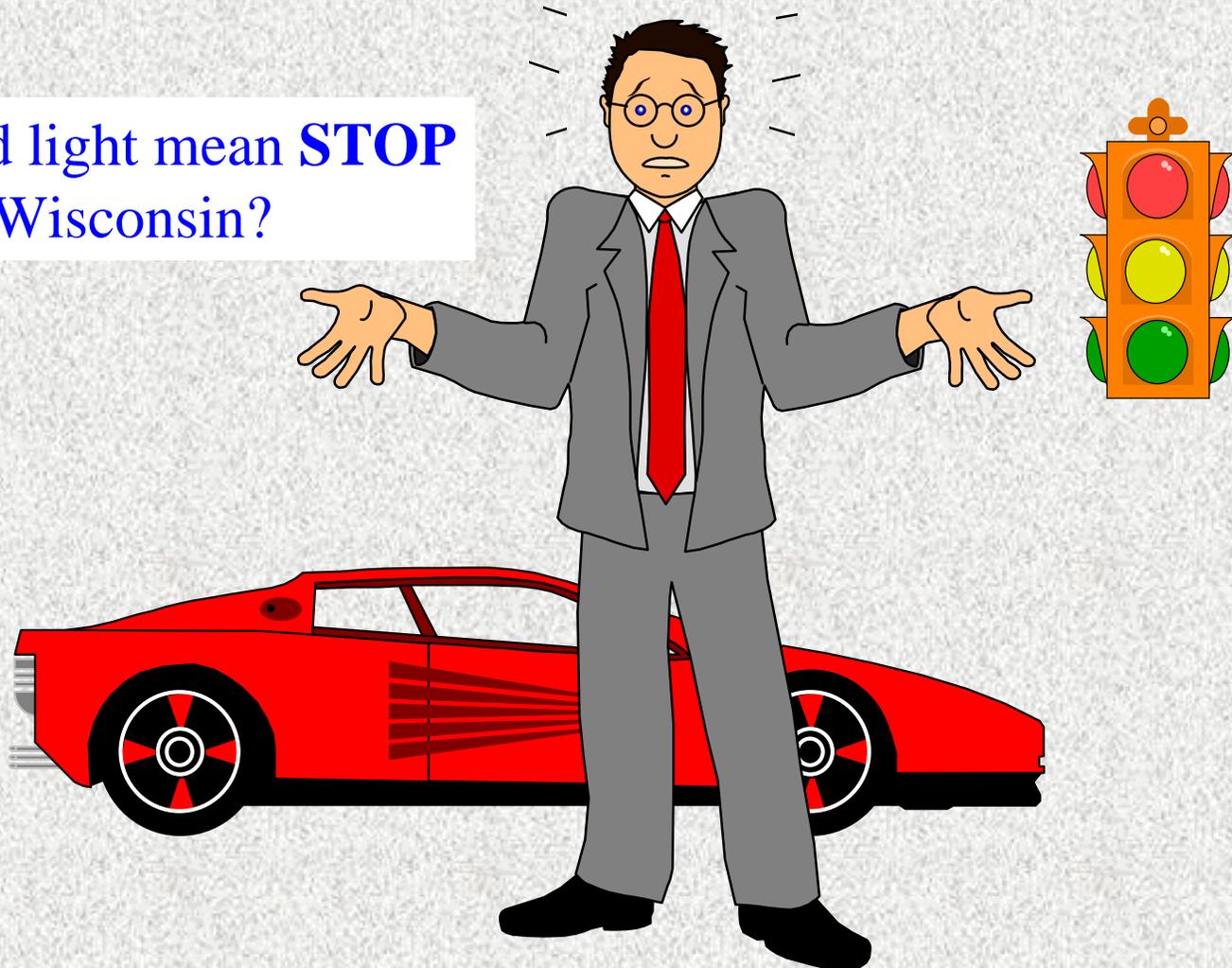
...ONE MORE ACRONYM

- ❑ **PCMCIA =**
- ❑ **People**
- ❑ **Can't**
- ❑ **Memorize**
- ❑ **Computer**
- ❑ **Industry**
- ❑ **Acronyms**



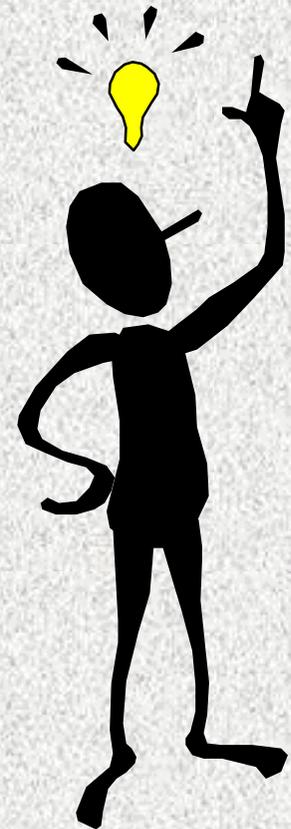
WHY DO WE NEED STANDARDS?

Does a red light mean **STOP**
or **GO** in Wisconsin?



WHY DO WE NEED STANDARDS? (cont'd)

- ❑ Consistent Functionality
- ❑ Interoperability
- ❑ Interchangeability
- ❑ Inter-agency Coordination
- ❑ Integration into ITS Systems
- ❑ TIA-21 Ties Funding to Critical Standards



SHOW ME THE MONEY!!

DCM Definition

Data collection monitoring (DCM) equipment processes sensor signals into information about the traffic passing over a sensor array. This information is stored by the equipment in one or more formats for future retrieval.

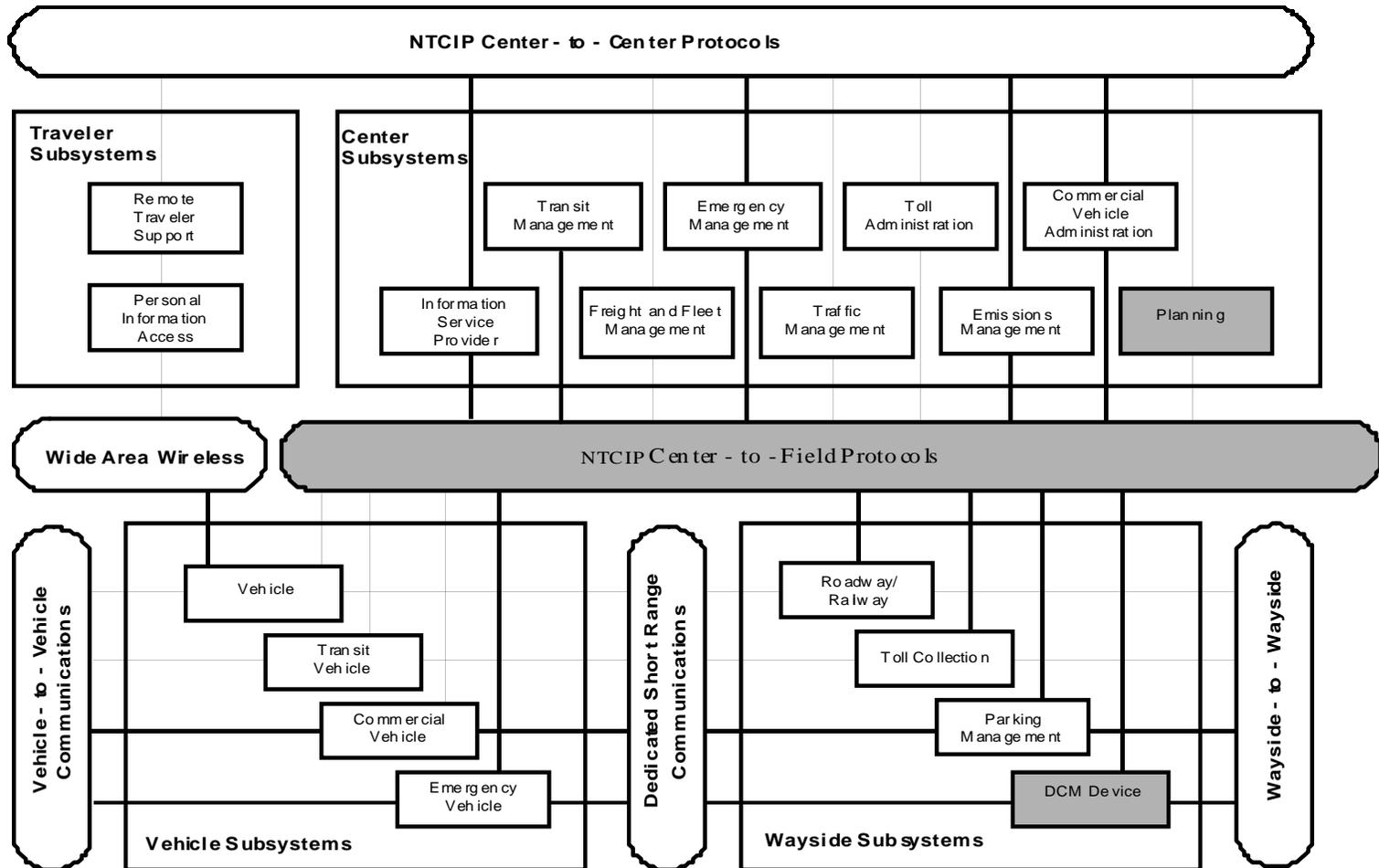
The equipment may be portable so it can be set up at a site for a data collection period as short as a day or it may be installed permanently for continuous monitoring of a site.

Three main types of data can be typically stored by DCM equipment either individually or in some combination. The three types are time stamped sensor events, time stamped individual vehicle data (PVR) and aggregate data summaries or bins.

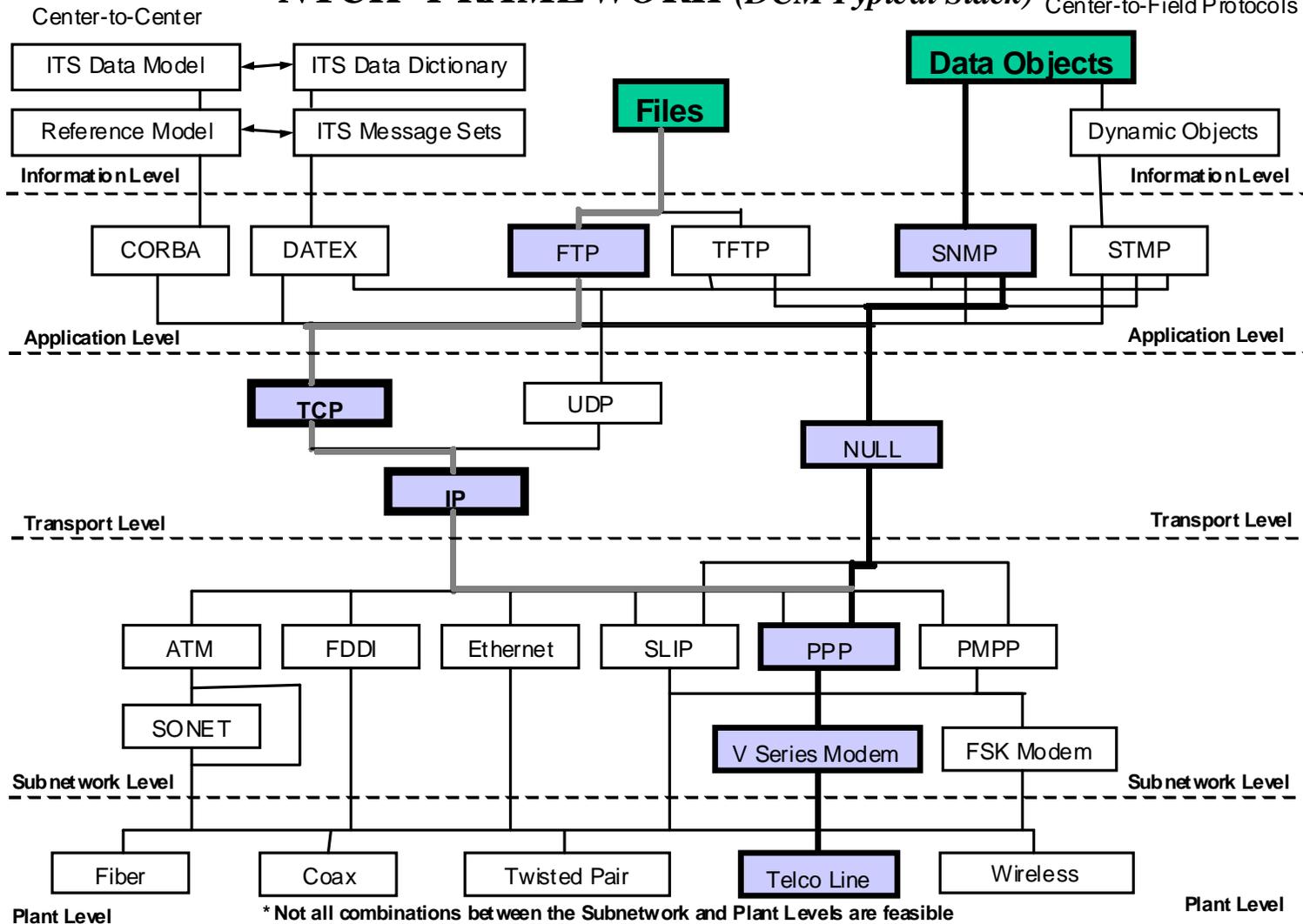
DCM SCOPE

- ❑ Develop the Required Data Objects to Configure, Control and Verify Operation of DCM Equipment
- ❑ Define Data File Structures
- ❑ Define/Recommend Mechanism to Transfer Data Files
- ❑ Includes Counts, Classification and WIM (Weigh-In-Motion)

NTCIP and the ITS National Architecture

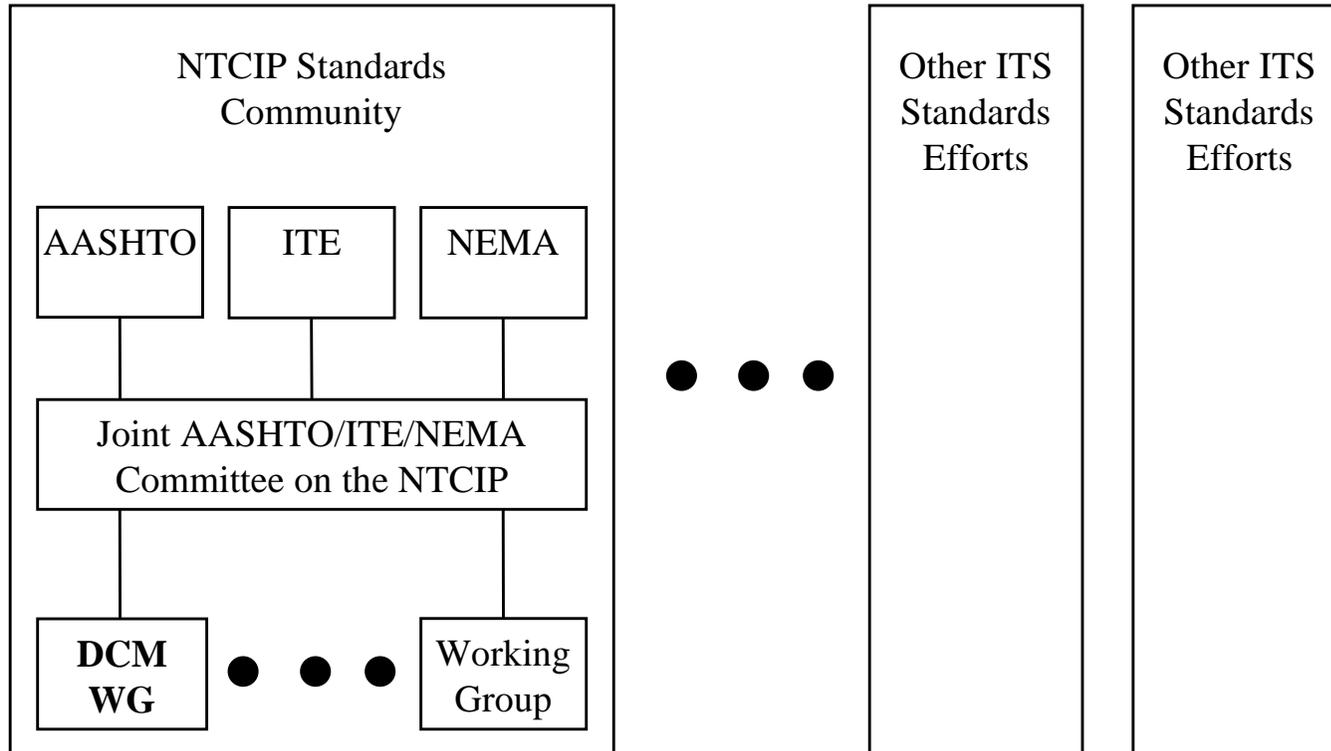


NTCIP FRAMEWORK (DCM Typical Stack)



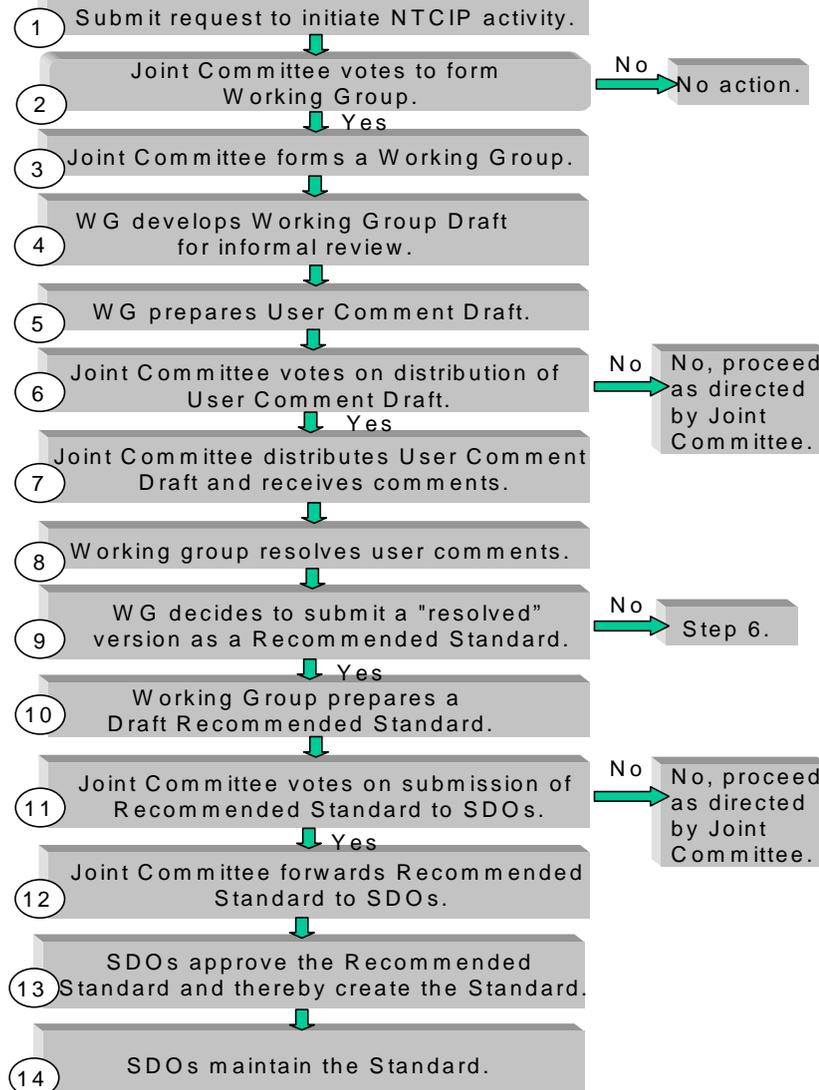
ITS Community

ITS Standards Activities





NTCIP WG Standards Process





DCM WG PROCESS

- ✓ Identify Required Functionality
- ✓ Produce a DCM Operational Description Document
- ✓ Create an Overview Tree Structure of Major Functional Elements
- ☐ Define More Detail Under Each Node Until a Manageable Object is Reached
- ☐ Define Values, Limits, Ranges and Units



DCM PROCESS (cont'd)

- ❑ Reiterate Through Draft Tree Structure Until Agreement Within WG

- ❑ Cross-Reference Data Objects Against Other WG's

- ❑ Create ASN.1 Definitions for Data Objects

- ❑ Define Conformance Groups

- ❑ Identify Data Objects as Mandatory and Optional Within Conformance Groups



DCM PROCESS (cont'd)

- ★ Recommend NTCIP Communications Profiles
- ★ Produce Some Application Examples Utilizing the Defined Data Objects
- Integrate all the Information Into a DCM Document
- Submit the Document to the Joint Committee for Approval

PROPOSED SCHEDULE

- ✓ Start Standard Development July, 1998
- ☐ Draft Standard Complete Feb., 2001
- ☐ Proposed Standard Apr., 2001
- ☐ Balloting Process Initiated June, 2001
- ☐ Endorsed Standard Sept., 2001
- ☐ Publish Standard Nov., 2001



Procurement Check-List Overview

- Discuss your requirements with vendors
- Consider specific communications needs
 - Communications data and timing
 - Channel loading
 - Device latency
- Analyze available resources
 - New system with no existing resources
 - Existing system with available resources
- Define an entire NTCIP Stack for intended system(s)
- Gather appropriate standards for each level within the NTCIP Stack
- Determine required Conformance Groups
 - Mandatory
 - Optional
 - See specific standards that relate to needed functionality
- Determine required Data Elements (objects)
 - Mandatory
 - Optional
 - See specific standards that relate to needed functionality
- Define realistic Range Values for system implementation
 - See functionality requirements
 - See specific standards that relate to needed functionality
- Tailor specifications to meet intended needs

HOW CAN I BUY NTCIP?

WHERE DO I FIND OUT MORE?



NTCIP Related Web Sites

Web Site	Address	Description
NTCIP	http://www.ntcip.org/	The official web site for NTCIP and related documents and information.
DATEX-ASN	http://www.viggen.com/ntcip/datex/index.htm	The web site for DATEX-ASN documents and information
DATEX-Net	http://www.datex.org/	The official web site of the DATEX-Net Standard currently in use in Europe.
IANA	http://www.iana.org/numbers.html	The Internet Assigned Numbers Authority web site.
IEEE ITS Page	http://stdsbbs.ieee.org/groups/scc32/index.html	Links to all of the IEEE standards efforts, including ATIS, Incident Management, Data Dictionaries, and Data Registries.
ISO	http://www.iso.ch/	The official ISO home page.
ISO TC204	http://www.sae.org/TECHCMTE/204.htm	The home page for ISO Technical Committee 204 (i.e., the committee for ITS standards).
ITE	http://www.ite.org/	ITE web site.
ITS America	http://www.itsa.org/	The home page for ITS America.
NEMA Standards	http://www.nema.org/nema/standards/	Site for ordering NTCIP standards.
RFC Index	http://www.nexor.com/public/rfc/index/rfc.html	A search engine for all of the Internet RFCs.
TCIP	http://www.tcip.org	The home page for the Transit Communications Interface Profiles.



PEEK

NTCIP FOR DUMMIES

www.ntcip.org



NTCIP GUIDE

DCM ACTIVE VOTING WG MEMBERS

Member Name	Affiliation	Category
Paul Stein	Wisconsin DOT	User
Douglas Terhune	Alaska DOT&PF	User
Ralph Gillmann Mark Howard	FHWA S.A.I.C.	Liasion Alternate
Nu Rosenbohm	PB Farradyne Inc.	Consultant
L.J. Wilkinson	Chaparral Systems, Inc.	Consultant
Jason Hedley	Iteris Inc.	Consultant
Andrew Pratt	I.R.D., Inc.	Vendor
Dan Gossack	TimeMark	Vendor
Rick Stalowski	Peek Traffic, Inc.	Vendor

**WHO SAYS STANDARDS DEVELOPMENT
CAN'T BE FUN !!**