

## 2 ITS Standards Deployments in New York State

There are several types of standards that can be used in ITS deployments including: hardware, software, communications, performance, maintenance and practices. The focus of this guide is on ITS communications standards, with a focus on center-to-field (C2F), center-to-center (C2C), wide area wireless, and WAVE/DSRC (wireless access to the vehicular environment / dedicated short range communications) standards.

The next sections summarize representative ITS projects that are applying ITS Standards in New York State.

### 2.1 *Center-to-Field ITS Deployments*

#### **NYSDOT/NYSTA Freeway Management Systems (Region 5, Region 11, and Others)**

NTCIP-based specifications and procurement documents have been developed for a number of NYSDOT projects, including the following.

##### Region 5 – Phase 3 Western Expansion

The Phase 3 Expansion of the Western New York Advanced Traffic Management System (ATMS) project was initiated to continue to reduce recurring and non-recurring vehicle hours of delay and to reduce secondary incidents in a cost effective manner. As part of a Phased ITS Deployment Plan (developed for the Niagara Region in 1996), this project will expand the existing Niagara Region ATMS along NY Route 5, NY Route 33, US Route 219, I-90 and I-290. All work will be completed within Erie and Niagara Counties.

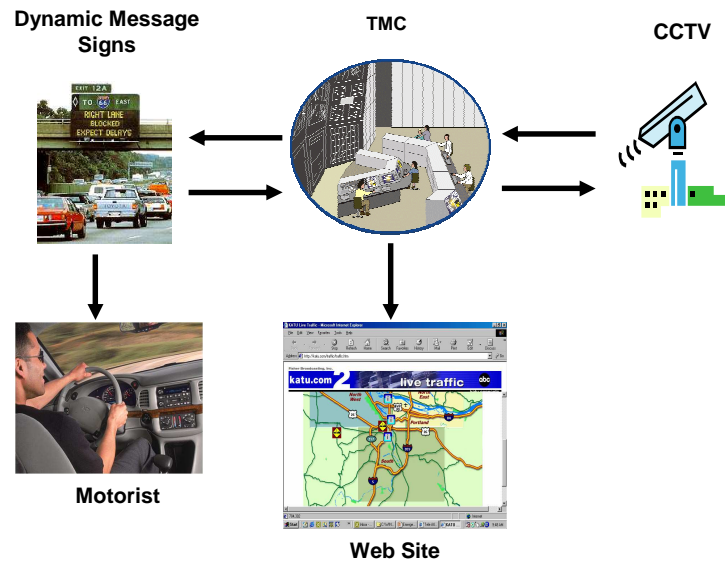
The proposed work will include the installation of Dynamic Message Signs (DMS), Closed Circuit Television (CCTV), TRANSMIT Readers, Advanced Traffic Controllers (ATC), and fiber optic communications. In addition to this work, the current Traffic Operations Center (TOC) central software will be upgraded to accommodate the expansion. The TOC is operated by the Niagara International Transportation Technology Coalition (NITTEC).

##### Region 11 - Western Queens Expansion Project (Long Island Expressway)

The Western Queens Expansion project provides additional ITS system capabilities along the Long Island Expressway. It covers equipment and components in the field and in the Region 11 Joint Traffic Management Center (JTMC) to be furnished installed and integrated as a complete traffic surveillance and control system.

The figure below shows the concepts related to freeway management and control.

**Figure 2-1. NYSDOT Freeway Management Device Control**



## **2.2 Wide Area Wireless ITS Deployments**

### **NYSDOT Integrated Incident Management System (IIMS)**

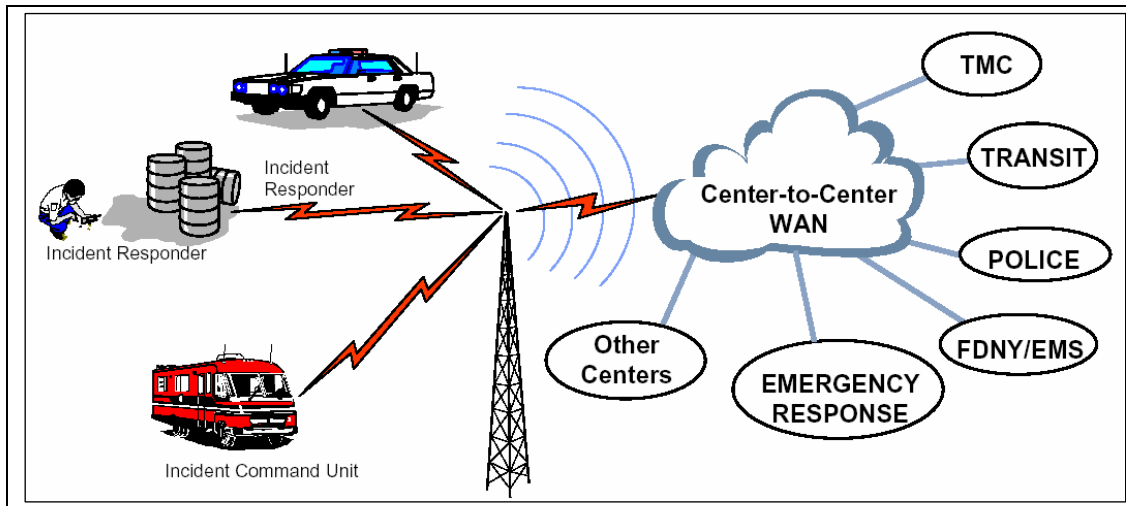
The IIMS project features the development and deployment of the IEEE 1512, XML Center-to-Center, and Wide Area Wireless communication standards, to help link public safety, maintenance, and DOT vehicles with centers for integrated incident response.

#### IIMS Project Description

The New York State Department of Transportation (NYSDOT) has deployed a real time incident management system that enhances the communication of incident data among incident managers at operations centers and incident response personnel at the incident scene. The Integrated Incident Management System (IIMS) is a multi-agency project managed and sponsored by the New York State Department of Transportation (NYSDOT), in partnership with New York City Department of Transportation (NYCDOT), the New York City Police Department (NYPD) and the Department of Emergency Management (NYCOEM). The United States Department of Transportation (USDOT) added support to IIMS as part of the ITS Public Safety Program. IIMS is being enhanced under USDOT funding to improve the dispatch of resources to the incident scene. This expanded initiative includes additional IIMS Field Operational Test evaluation, outreach to the Public Safety and ITS community, and support of ITS standards deployment and testing.

The IIMS Project Concept is shown in the figure below.

**Figure 2-2. IIMS Project Concept**



### **2.3 Center-to-Center ITS Deployments**

#### **NYSDOT Transit Schedule Data Exchange Architecture (TSDEA)**

The TSDEA Project brings forth the design and development of a transit schedule data exchange based on the TCIP and XML Center-to-Center communications standards.

##### TSDEA Project Description

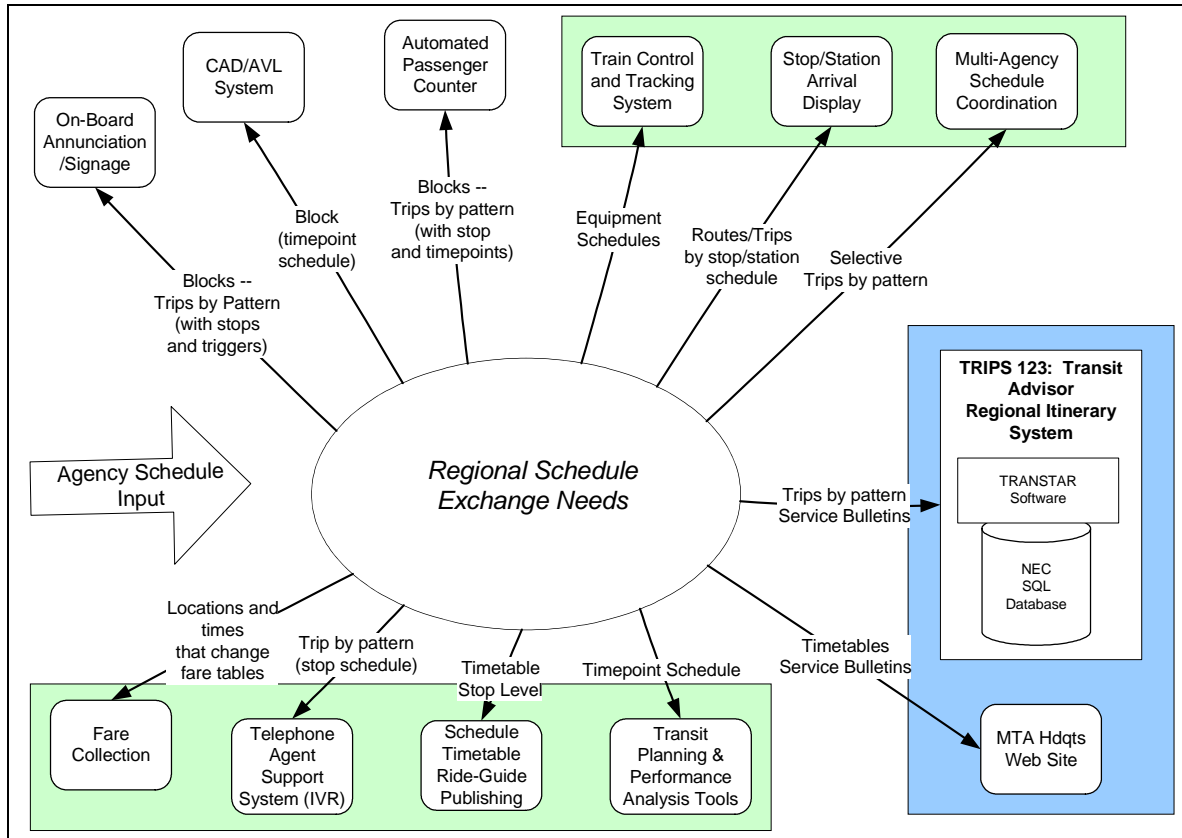
This project, managed by NYSDOT, is seeking to provide an efficient, standards-based, framework for managing and exchanging schedule data among agencies and effectively communicating schedule information from multiple NY State transit providers to the public. The effort is focused on collaboratively defining a framework, as well as tools for data development, conversion and exchange, to support regional multi-agency initiatives that use schedule data, including TRIPS123. The project is intended to support transit agency requirements for managing the definition, organization and exchange of schedule data.

The product of this effort will be a published and open Schedule Data Profile, a language in which to describe transit schedule data in NY in a standardized manner. In addition, the project will demonstrate a framework for managing and exchanging schedule data through a technology deployment of the Transit Schedule Data Exchange Architecture (TSDEA).

The “Downstate” region of New York State is the focus of this initial phase of the TSDEA development given the extent and multi-agency nature of its transit services. This remarkable range of transit service options provides the greatest opportunity for testing and demonstrating the benefits of integration and coordination.

The TSDEA Project Concept is shown in the figure below.

**Figure 2-3. TSDEA Project Concept**



## NYSDOT Information Exchange Network (IEN)

### NYSDOT IEN Project Description

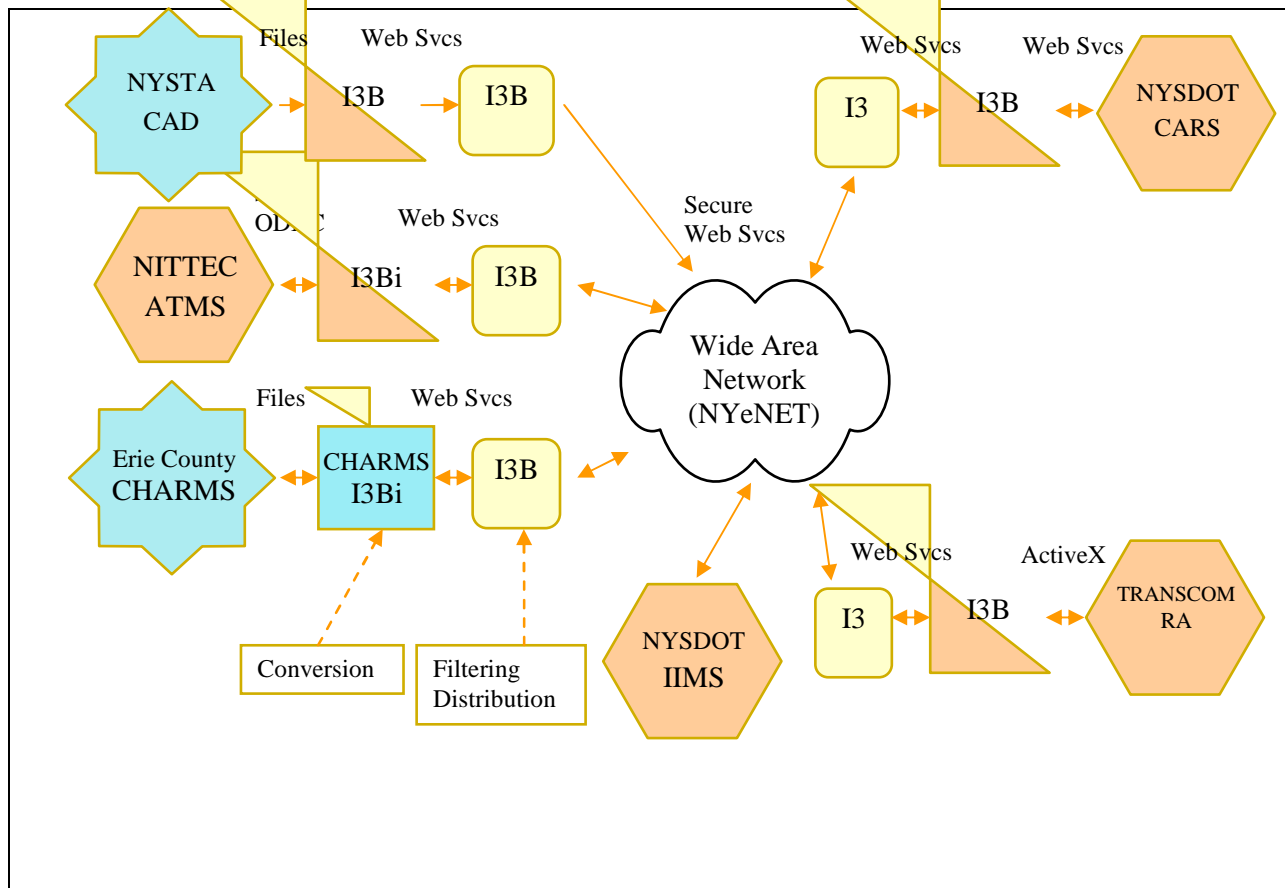
The NYSDOT IEN brings together the IEEE 1512, TMDD, and XML Center-to-Center communications standards to provide a center-to-center communications infrastructure for statewide interagency communications within New York State and with neighboring states.

Specific project goals include:

- Provide an infrastructure that supports data exchange between dissimilar systems in real time
- Provide interfaces to legacy existing systems without requiring extensive reprogramming of legacy/existing systems
- Use eXtensible Markup Language (XML), Simple Object Access Protocol (SOAP)

The NYSDOT IEN Project Concept is shown in the figure below.

**Figure 2-4. NYSDOT IEN Project Concept**



## 2.4 WAVE/DSRC ITS Deployments

### Atlantic Beach Bridge 5.9 GHz Demonstration Prototype

#### Atlantic Beach Bridge 5.9 GHz Prototype Project Description

The Long Island Nassau County Bridge Authority is developing a prototype system with the new 5.9GHz system at its Atlantic Beach Bridge on NY-878 just south of Kennedy Airport NY. The test at the bridge will demonstrate dual readers that can handle both E-ZPass, a 915MHz system, and the new 802.11p 5.9GHz transponders. It will be essential to demonstrate that the next generation of transponders work with 915MHz since the two would likely have to coexist for quite a number of years at toll plazas. All the New York toll authorities are now in the process of replacing their first generation 915 MHz Mark IV-built IAG transponders, some 5 million or so, with second generation 915 MHz Mark IV-built IAG systems.

IBTTA in July 2005 produced an "ETC Requirements Document" which specifies that the only acceptable way forward is "co-deployment" in which 915MHz and 5.9GHz operate together in the same toll systems for a number of years at least. The Atlantic Beach Bridge tests will be invaluable in proving this to everyone.

