
Technical Memorandum #1: Technical Review of Existing Documentation

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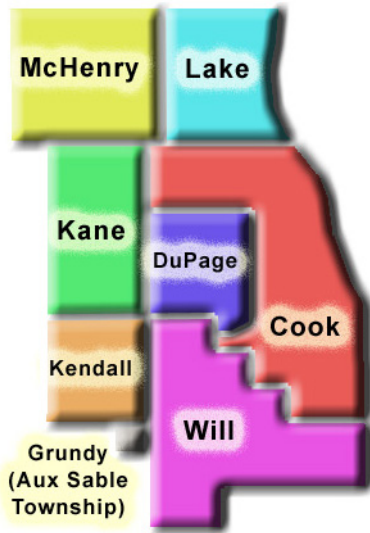
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Table of Contents

INTRODUCTION	1
DOCUMENTS REVIEWED	2
SUMMARY OF PROPOSED CHANGES TO EXISTING REGIONAL ARCHITECTURE.....	3
SUMMARY OF PROPOSED STAKEHOLDERS CHANGES	3
SUMMARY OF PROPOSED SUBSYSTEM CHANGES.....	4
SUMMARY OF PROPOSED MARKET PACKAGE CHANGES	5
SUMMARY OF PROPOSED FUNCTIONAL REQUIREMENT CHANGES	10
OTHER PROPOSED CHANGES	11

Introduction

In 2002, the existing Northeastern Illinois Regional Intelligent Transportation Systems (ITS) Architecture came into existence officially, documenting the extensive body of ITS projects and ongoing planning activities. Since that time, numerous regional ITS



architectures as well as a statewide effort highlight the need for the largest metropolitan area in the state to update the regional ITS architecture. Additionally, the CATS Policy Committee approved expansion of the metropolitan planning area in June 2006 to include all of Kendall County and the Aux Sable Township in Grundy County.

The figure shown to the left shows the new geographic boundary for the regional ITS architecture.

This memorandum documents the technical review of documents provided in order to begin the update process and the initial set of changes proposed.

The goal of the review was to identify aspects of the existing architecture needing revision due to changes in nomenclature, stakeholder ownership, and/or system upgrades to existing architecture element status. In performing the technical review of existing documentation, the following aspects were considered:

1. Scope of the project including the geographic scope and timeframe it covers, the provided transportation services, and which stakeholders and/or institutions are involved in the project.
2. Applicability to the regional ITS architecture upgrade process. Specifically, are the documented elements already in the regional architecture, and if so, what level of detail is available.

Documents Reviewed

The following documentation was reviewed:

1. Northeastern Illinois Regional ITS Architecture Document, CATS, December 2002
2. Northeastern Illinois Regional ITS Architecture Turbo File, CATS, January 2003
3. Northeastern Illinois Regional ITS Architecture Maintenance Plan, CATS, June 12, 2003
4. Northeastern Illinois ITS Deployment Plan Update – Final Report including regional ITS project list, CATS, July 2005
5. Northeastern Illinois ITS Deployment Plan Update – Addendum to Final Report, CATS, July 2005
6. Chicago Traffic Management Center Project Development Report (Draft Report), OEMC, July 2005
7. Will County Traffic Management Center Feasibility Study & Conceptual Design, WCHD, July 2006
8. Statewide ITS Architecture Turbo File, IDOT, September 2006
9. DuPage County Subregional ITS Architecture Report, DCDOT, February 2007
10. DuPage County Subregional ITS Architecture Turbo File, DCDOT, February 2007
11. Chicago Metropolitan Urban Partnership Application (Draft), IDOT, April 2007
12. Various Regional ITS Stakeholder interviews & interview notes with IDOT District 1 Traffic, Illinois Tollway, RTA, Pace, Metra, Edwards & Kelcey

Summary of Proposed Changes to Existing Regional Architecture

Summary of Proposed Stakeholders Changes

1. Remove reference to Meigs Field.
2. Change globally **Roadside Equipment** in stakeholder names to *Field Equipment*.
3. Change **Chicago Area Transportation Study (CATS)** to *Chicago Metropolitan Agency for Planning (CMAP)*.
4. **DuPage County Maintenance** renamed to *DuPage County Highway Maintenance Dispatch*.
5. Description for **DuPage County Division of Transportation** should be changed to: *The Division of Transportation is responsible for the construction and maintenance of the County Highway system which serves the over 900,000 residents of DuPage County. The Division of Transportation maintains approximately 220 miles of arterial highway and 50 miles of recreational trails in DuPage County.*
6. **DuPage County Office of Emergency Management** should be renamed as *DuPage County Office of Homeland Security and Emergency Management: The Office of Homeland Security and Emergency Management coordinates the operations of all governmental and non-governmental agencies in time of emergency and provides the unique skills and capabilities related to disaster preparedness.*
7. **DuPage County Sheriff** description should be changed to: *The Sheriff is the chief law enforcement officer in DuPage County. The Office directly services the unincorporated areas of the county providing public safety dispatch and emergency call taking.*
8. **Illinois County Emergency Services** description should be changed to: *Represents the agencies that own and operate EOCs in adjacent counties (Will, Kane and Cook). Responsible for providing comprehensive emergency management system that integrates all departments, levels of government, and the private sector during disasters.*
9. **Private Sector Maintenance Contractor** renamed as *Private Sector Maintenance Contractor Dispatch*.

Summary of Proposed Subsystem Changes

10. **DuPage County TMC** status should be changed to *Existing*.
11. **IDOT District 1 Bureau of Traffic Signal Unit Roadside Equipment** should be renamed as: *IDOT District 1 Bureau of Traffic Signal Unit Field Equipment* and its description as: *Roadside equipment for IDOT District 1 Bureau of Traffic Signal Unit. Includes traffic signals (including detection), EVP, CCTV cameras, and arterial DMS.*
12. **Illinois Gateway** should be under IDOT ITS Program office and its status should be made as *Existing*.
13. **Illinois State Police Dispatch (Districts 2, 5 and Chicago)** should be changed to *Illinois State Police Dispatch (Districts 2)* and its description should be: *Operations and dispatch for State Police District 2.*
14. **Illinois Transit Hub** status should be changed to *Existing*.
15. **ISTHA TCM (TIMS)** status should be changed to *Existing*.
16. **ISTHA TMC Roadside Equipment** should be renamed as *ISTHA TMC Field Equipment*.
17. **Metra Parking Management Guidance System** status should be changed to *Existing*.
18. **Metra PMGS Signs** status should be changed to *Existing*.
19. **Metra Train Information Management System** description should be changed to: *The Metra TIMS system collects location and schedule adherence information from trains, primarily for passenger information use. This includes the Metra Hub that feeds the Illinois Transit Hub.*
20. **Municipal Public Safety Dispatch** description should be changed to: *Call taking and emergency services dispatch (police, fire, and EMS) operated by municipalities in DuPage County. Includes Fire Protection District dispatch. The following municipal public safety dispatch organizations are examples of these types of elements: DuComm (provides emergency dispatch services for 27 police and fire departments in eastern DuPage County) and the City of Naperville Communications Section.*
21. **Municipal TMCs** status should be changed to *Existing* and its description should be changed to: *Higher functioning transportation management facilities run by municipalities. Represents a level of TMC below the County TMC. e.g. Naperville, Joliet, Schaumburg, Aurora and Elgin. May include multi-jurisdictional signal coordination within subareas or corridors that may or may not be contiguous. In the future, functions may include system monitoring, data storage, and operational coordination.*

22. **Northeastern Illinois 511 System** should be under IDOT ITS Program Office.
23. **Pace IBS** status should be changed to *Existing* and description should be changed to: *Pace Intelligent Bus System, a centralized dispatch computer system which supports physically distributed dispatchers. The IBS includes not only the dispatch system, but also AVL, on-board processors, audio and visual information display, passenger counting. Provides bus schedule adherence data for driving BusInfo Signs. This includes the Pace Hub that feeds the Illinois Transit Hub.*
24. **Pace Transit Bus Vehicles** description should be changed to *Fixed route transit vehicles operated by Pace. Contain automated vehicle location, passenger counting and, in the future, transit priority signal transmitters.*
25. **Private Taxi Dispatch** description should be changed to: *Operations and dispatch for private Taxi companies operating within the county.*
26. **Regional Event Facilities** description should be changed to: *Represents the various event facilities in the region that are generators of planned events with significant traffic or transit impact. Examples are Universities and Colleges. etc.*
27. **DuPage Centralized Paratransit Dispatch** should be renamed as *Ride- DuPage Dispatch*.
28. **DuPage Paratransit Vehicles** should be renamed as *Ride-DuPage Vehicles*.
29. **Illinois State Operations Center** should be renamed as *Statewide Emergency Operations Center*.
30. **Trucking Organizations** should add the *Trade Regulatory Agencies* as its Architecture Entity.

Summary of Proposed Market Package Changes

The table below lists the various Market Package Changes in detail.

Market Package	Status	Entity to be Included
ATMS02	<i>Existing</i>	ISTHA I-Pass Toll Plazas
ATMS06	<i>Planned</i>	DuPage County Field Equipment
		DuPage County TMC
ATMS07	<i>Planned</i>	DuPage County Field Equipment
		DuPage County TMC
ATMS08	<i>Existing</i>	ISTHA TMC Field Equipment
		Municipal/Township Maintenance
	<i>Planned</i>	DuPage County TMC
		Private Sector Maintenance Contractor Dispatch
		Utility Company Dispatch

Market Package	Status	Entity to be Included
ATMS10	<i>Existing</i>	(all entities are now <i>existing</i>)
ATMS13	<i>Planned</i>	DuPage TMC
ATMS14	<i>Existing</i>	Metra Wayside Equipment
ATMS15	<i>Potential</i>	DuPage County TMC
		Illinois Gateway
		Municipal TMCs
ATMS16	<i>Planned</i>	Metra Parking Management Guidance System
		Satellite TMC OHare Airport
		Vehicles
MC01	<i>Planned</i>	IDOT District 1 Bureau of Construction
		Municipal/Township Maintenance
		Private Sector Maintenance Contractor Dispatch
		Utility Company Dispatch
MC03	<i>Existing</i>	Vehicles
		DuPage County Highway Maintenance Dispatch
		DuPage County Sheriff Communication Center
		ISTHA TMC (TIMS)
		ISTHA TMC Field Equipment
MC04	<i>Existing</i>	Private ISPs – Travel Information Services
		IDOT District 1 Bureau of Construction
		IDOT District 1 Traffic Signal Unit
		IDOT District 1 Maintenance Management
		IDOT District 1 Traffic Systems Center (TSC)
		ISTHA Maintenance and Construction
		ISTHA TMC (TIMS)
	Media	
	<i>Planned</i>	Ride-DuPage Dispatch
		DuPage County TMC
Weather Services		
MC06	<i>Existing</i>	DuPage County Sheriff Communications Center
		Municipal TMCs
	<i>Planned</i>	Private Sector Maintenance Contractor Dispatch
MC07	<i>Existing</i>	DuPage County TMC
		IDOT District 1 Bureau of Construction
		IDOT District 1 Traffic Signal Unit Field Equipment
		IDOT District 1 ComCenter Field Equipment
		IDOT District 1 Traffic Systems Center (TSC)
IDOT District 1 Traffic Systems Center (TSC) Field Equipment		
		Municipal TMCs

		Private Sector Maintenance Contractor Dispatch
		Utility Company Dispatch
	<i>Planned</i>	DuPage County TMC
MC08	<i>Existing</i>	Municipal TMCs
	<i>Planned</i>	DuPage County Field Equipment
		DuPage County TMC
MC10	<i>Planned</i>	DuPage County Highway Maintenance Dispatch
		IDOT District 1 Bureau of Traffic Signal Unit
		Illinois Gateway
		Municipal / Township Maintenance
		Private Sector Maintenance Contractor Dispatch
APTS5	<i>Existing</i>	Municipal Public Safety Dispatch
		Municipal Transit Operations
		Public/Non-Profit Paratransit Services
		Regional Paratransit Dispatch
APTS7	<i>Planned</i>	DuPage County Field Equipment
		DuPage County TMC
		Municipal TMCs
		Satellite TMC OHare Airport
APTS8	<i>Planned</i>	Private ISPs – Travel Information Services
	<i>Potential</i>	Ride-DuPage Dispatch
ATIS1	<i>Existing</i>	IDOT District 1 ComCenter
		IDOT District 1 Traffic Systems Center (TSC)
		ISTHA TMC (TIMS)
	<i>Potential</i>	DuPage County TMC
		IDOT District 1 ComCenter
		Illinois Gateway
		Municipal TMCs
		Municipal Transit Operations
ATIS2	<i>Existing</i>	Regional Transportation Authority Travel Information Center (TIC)
EM01	<i>Existing</i>	Highway Emergency Lane Patrol Vehicles
		IDOT Emergency Traffic Patrol Vehicles
EM02	<i>Planned</i>	DuPage County EOC
		DuPage County Sheriff Communications Center
		DuPage County TMC
		Illinois Emergency Traffic Patrol (ETP)
		IDOT Emergency Traffic Patrol Vehicles
		Illinois State Police Dispatch (District 2)
		Illinois State Police District 15 Operations Desk
		ISTHA TMC (TIMS)
Statewide Emergency Operations Center		

	Existing	DuPage County Field Equipment
		IDOT District 1 Bureau of Traffic Signal Unit Field Equipment
		IDOT District 1 ComCenter
		IDOT District 1 ComCenter Field Equipment
		Highway Emergency Lane Patrol Vehicles
		Illinois State Police Vehicles
		Municipal EMCs
		Municipal Public Safety Dispatch
		Regional Hospitals
EM04	Existing	DuPage County EOC
		IDOT District 1 ComCenter
		Private Tow and Recovery Operations
EM06	<i>Existing</i>	DuPage County EOC
		DuPage County Field Equipment
		DuPage County Sheriff Communications Center
		DuPage County TMC
		Municipal EMCs
		Municipal Public Safety Dispatch
		Municipal TMCs
		Private ISPs – Travel Information Services
Statewide Emergency Operations Center		
EM08	<i>Existing</i>	User Personal Computing Devices
		DuPage County EOC
		DuPage County Highway Maintenance Dispatch
		DuPage County Sheriff Communications Center
		DuPage County TMC
		IDOT District 1 ComCenter
		IDOT District 1 Maintenance Management
		Illinois State Police Dispatch (District 2)
		Illinois State Police District 15 Operations Desk
		ISTHA Dispatch Center
		ISTHA Maintenance and Construction
		ISTHA TMC (TIMS)
		Municipal EMCs
		Municipal Public Safety Dispatch
		Municipal TMC
Municipal Transit Operations		
Municipal/Township Maintenance		
Statewide Emergency Operations Center		

Market Package	Status	Entity to be Included
EM09	Potential	AMTRAK Rail
		DuPage County EOC
		DuPage County Highway Maintenance Dispatch
		DuPage County Sheriff Communications Center
		DuPage County TMC
		IDOT District 1 Bureau of Traffic – Expressway Operations Unit
		IDOT District 1 Bureau of Traffic Signal Unit
		IDOT District 1 ComCenter
		IDOT Emergency Traffic Patrol (ETP)
		Illinois State Police Dispatch (District 2)
		Illinois State Police District 15 Operations Desk
		ISTHA Dispatch Center
		ISTHA TMC(TIMS)
		Metra Consolidated Control Facility
		Municipal EMCs
		Municipal Public Safety Dispatch
		Municipal TMCs
		Municipal Transit Operations
		Pace Paratransit Dispatch
		Private Bus Dispatch
		Private Taxi Dispatch
Ride-DuPage Dispatch		
Satellite TMC OHare Airport		
Statewide Emergency Operations Center		
AD1	Existing	IDOT District 1 ComCenter
		IDOT District 1 Traffic Systems Center (TSC)
		Illinois Gateway
	Planned	Illinois Transit Hub
		Academic/Research Organizations Data Warehouse
		DuPage County TMC
AD2	<i>Existing</i>	Municipal TMCs
		Northeastern Illinois Regional Data Archive
		Academic/Research Organizations Data Warehouse
		Illinois Gateway
		Northeastern Illinois Regional Data Archive

Summary of Proposed Functional Requirement Changes

The table below lists the various functional requirement changes in terms of equipment packages that need to be selected.

Element	Architecture Entity	Equipment Package
DuPage County EOC	Emergency Management / Archived Data User System	Incident Command
		Emergency Evacuation Support
		Emergency Commercial Vehicle Response
		TMC Traffic Information Dissemination
DuPage County Field Equipment	Roadway Subsystem	Roadway Speed Monitoring
DuPage County Sheriff Communications Center	Emergency Management	Roadway Data Collection
		Emergency Routing
DuPage County TMC	Traffic Management/ Archived Data User System	Emergency Evacuation Support
		TMC Evacuation Support
		Rail Operations Coordination
		TMC Speed Monitoring
		TMC Multimodal Coordination
IDOT District 1 Bureau of Traffic Signal Unit Field Equipment	Roadway Subsystem	Traffic Data Collection
		Roadway Signal Priority
		Roadway Traffic Information Dissemination
IDOT District 1 ComCenter Field Equipment	Roadway Subsystem	Roadway Work Zone Traffic Control
		Field Barrier System Control
IDOT District 1 Traffic Systems Center (TSC)	Information Service Provider / traffic Management	Roadway Incident Detection
IDOT District 1 Traffic Systems Center (TSC) Field Equipment	Roadway Subsystem	Roadway Work Zone Traffic Control
ISTHA I-Pass Toll Plazas	Toll Collection	Roadway Probe Beacons
Municipal EMCs	Emergency Management	Emergency Evacuation Support
Municipal Public Safety Dispatch	Emergency Management	Emergency Routing
		Incident Command

Element	Architecture Entity	Equipment Package
Municipal TMC	Traffic Management	TMC Traffic Information Dissemination
		TMC Evacuation Support
		HRI Traffic Management
		Rail Operations Coordination
		TMC Multimodal Coordination
Municipal/ Township Maintenance	Maintenance and Construction Management	MCM Work Activity Coordination
Pace Transit Bus Vehicles	Transit Vehicle Subsystem	On-board Transit Fare and Load Management
Private Bus Dispatch	Transit Management	Transit Garage Maintenance
		On-Board Fixed Route Schedule Management
		On-Board Paratransit Operations
Private ISPs – Travel Information Services	Information Service Provider	Infrastructure Provided Trip Planning
Private Taxi Dispatch	Transit Management	Transit Vehicle Operator Scheduling

Other Proposed Changes

31. The ISTHA has RIWS capabilities which need to be incorporated in the functionalities of ISTHA TMC (TIMS), ISTHA TMC Roadside Equipment and the subsequent flows between these elements.
32. ISTHA also has a GIS database of its inventory which needs to be added to architecture.
33. Lake County TMC is now named as Lake County PASSAGE
34. DuPage County EOC should have the additional subsystem capabilities of “Traffic Management” and “Archived Data User Systems”