Siemens Mobility Overview

Standards Development: Lessons Learned

Users: Diverse, Needing Information not Data

Vendor Needs: Adoption + Level Playing Field

Deployment: Correct from the Beginning

Deployment Status: Apps and Integration
Siemens Infrastructure and Cities Sector

USA Manufacturing

Sacramento, California
Light Rail Trains

Austin, Texas
Traffic Control Equipment
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Surface Transportation Standards: *ITE Journal*, May 2010
# Advanced Transportation Controller Joint Committee Membership

## NEMA Members:
1. Dave Miller, Siemens ITS, JC Committee Chair
2. Ray Deer, Peek Traffic
3. Craig Gardner, Intelight-ITS
4. Scott Evans, Eberle Design
5. Kleinjan Deetlefs, McCain
6. Jon Wyatt, Intelligent Devices, Inc

## ITE Members:
1. Ed Seymour, Texas Transportation Institute
2. Andrew Mao, Harris County, TX
3. Robert Rausch, Transcore
4. Mohamad Talas, New York City DOT
5. John Thai, City of Anaheim
6. Vacant, <Replaces Doug Tarico, McCain>

## AASHTO Members:
1. Dave Holstein, Ohio DOT
2. Guillermo Ramos, New York DOT
3. Ken Montgomery, Georgia DOT
4. Jeff McRae, CALTRANS
5. Vacant, <Replaces Al Kosik, Texas DOT>
6. Vacant, <Replaces Jack Brown, Florida DOT>
NTCIP: Lessons Learned

Issue: Manufacturer-Specific Objects
Learn: Mandatory objects & data structures

Issue: Interpretation / Incompatibilities
Learn: Prototype ⇨ Refine ⇨ Test

Issue: Communication rate, capacity
Learn: Collect ⇨ Condense ⇨ Convey

Issue: Latency
Learn: Timestamp

Issue: Long Development, Late Acceptance
Learn: Systems Engineering Process
§ Siemens Mobility Overview
§ Standards Development: Lessons Learned
§ **Users: Diverse, Needing Information not Data**
§ Vendor Needs: Adoption ‡ Level Playing Field
§ Deployment: Correct from the Beginning
§ Deployment Status: Apps and Integration
User Needs

Scalability: Performance Measure for Wide Cross Section of Users

• Solo Intersections
• Corridors
• Urban Grids

Investment Value

• Limited funding must yield true improvements
• Verify improvements
• Could be part of funding model

Measure not Model

• Modeling output only as good as simulated inputs
• Modern technology can record every vehicle actuation
Vendors

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Vendor Needs

Uniform Performance Measure for All
- Level Playing Field
- Apples to Apples

True Improvement Data
- Install and run performance measures “before”
- Update equipment / software / control strategy
- Run performance measures “after”

Widespread Adoption of Uniform Performance Measures
- Need widely-accepted measure
- Published standard, NTCIP node
- Inclusion in bid contracts
Deployment

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**Deployment: Correct from the Beginning**

Deployment Status: Apps and Integration
Deployment

Correct from the Beginning

- Expensive to update thousands of intersections, not iterative
- Smallest defect could invalidate large base of historical records

Baseline Hardware and Communications Lifecycle

- Retrofit to older controllers?
- Work on all legacy communications systems?
- Most installations trending towards Ethernet IP, replace legacy

Performance Measures Record the Effect Of:

- Pedestrian Phases
- Transit Priority
- RR Preemption
Deployment Status

- Siemens Mobility Overview
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- Vendors: Adoption ‡ Level Playing Field
- Deployment: Correct from the Beginning

Deployment Status: Apps and Integration
Advanced Transportation Controller (ATC 5.2b)

- Rack Mount ATC
- Shelf Mount ATC
- Engine Board
  - Embedded Linux 2.6
  - Interchangeable Among Manufacturers
  - “Future Proofing”
- 2070-1C Retrofit
- NEMA Retrofit
Single Controller, Multiple Applications

**APPs**

- Signal Control
- Travel Time
- Performance Measures
- Adaptive Control

**Shared Resources**

- Hardware
- Linux OS
- Input/Output
- Front Panel
- Ethernet

Small %
Bluetooth Travel Time

Bluetooth®-Based Travel Time/Speed Measuring Systems Development

Final Report

Darryl D. Puckett and Michael J. Vickich

Performing Organization
University Transportation Center for Mobility™
Texas Transportation Institute
College Station, TX

Sponsoring Agency
Department of Transportation
Research and Innovative Technology Administration
Washington, DC

UTC Project #09-00-17
June 2010

Courtesy of Texas Transportation Institute
Bluetooth Travel Time, October 2009

3,271 matches

2,492 matches

Courtesy of Texas Transportation Institute
Use Case: ARRA Harris County TX

387 Intersections
- Hurricane Evacuation
- Gulf Coast to Dallas
- Travel Time Software APP
- Performance Measure APP
- Connected Vehicle DSRC Later
- World Congress White Paper

SiTravel APP
Sensor ATC 5.2b
Thank you for your attention!

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