
The Status of ADUS

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ITS User Service Bundles

- Travel and Traffic Management
- Public Transportation Management
- Electronic Payment
- Commercial Vehicle Operations
- Emergency Management
- Advanced Vehicle Safety Systems
- Information Management
- Maintenance and Construction Management

Archived Data User Service

- ITS collects much “real-time” data
 - ***Save the data***
- Combine multiple sources
 - ***Re-use the data***
- Archived Data Management Systems (ADMS)
 - www.its.dot.gov/TravelManagement/adus.htm

Types of ADMS

- ITS Data Repository
- Traffic & Roadside Data Archival
- Government Reporting Systems Support
- On-Line Analysis and Mining
- Virtual Data Warehouse Services

ADUS Vision

*Improve transportation decisions
through the archiving and sharing
of ITS-generated data.*

ITS Traffic Data Collected

- Traffic volume
 - Current & scheduled work zones
 - Traffic incidents
 - Traffic speed
 - Vehicle classification
 - Road and weather conditions
 - Lane occupancy
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Freeway Management Survey

Data	Collected	Archived	Percent
None	32		
Volume	68	59	87%
Incidents	52	35	67%
Veh. Class	49	37	76%
Speeds	47	31	66%

ADUS Program

- Integrate multiple ITS data sources
- Conduct case studies
- Quantify benefits and costs
- Promote awareness
- Conduct research
- Facilitate deployment

Proof of Concept of ITS as An Alternative Data Resource

- Oak Ridge National Laboratory
 - Long Island's INFORM
 - Orlando's Traffic Control Center
 - Final Report September, 2001
- Data archiving and dissemination, data quality, aggregation and imputation, benefits of using ITS-generated data
- www-cta.ornl.gov/Proof_of_Concept.pdf

Survey of Emerging Sensor and Information Technologies

- Mitretek – Final report October, 2001
 - Data Capture and Collection
 - Data Transfer, Data Storage
 - Data Integrity, Data Access
 - Data Organization, Data Distribution
 - Data Analysis, Information Flow
 - Information and Knowledge Exploitation

Cross-Cutting Studies and State-of-the-Practice Reviews

- Oak Ridge National Laboratory
 - Final report April, 2002
- Assess the state-of-the-practice, identify technological and institutional barriers and opportunities, and show examples of current practices
- Reveal new applications and potential uses for archived data

Potential of Archived ITS Data for Government Reporting

- Cambridge Systematics
 - Draft report May, 2002
- Determine the extent to which ITS could provide sources of data for Federal, State, and local government data reporting systems
 - ITS data flows, data dictionaries

Archived Data Management System (ADMS) Data Model

- Battelle – Draft data model May, 2002
- Develop a high-level data model for ADMS
 - Covers Travel and Traffic Management user service bundle
- Show how key data concepts can be made comparable across applications

Field Operational Test

- TMC Applications of Archived Data
 - Work with a TMC or multiple TMCs
- Focus on traffic data applications
 - ATMS and ATIS
- Develop methodology for enhancing TMC operations through applied archived data

Michigan ITS Center

- Traffic Management center (“MITS”)
 - 180 miles freeway miles
 - 2600 inductive loops
 - Volume, speed, occupancy
- Transportation Planning office
 - Receives monthly spreadsheet
 - Calculates AADT

NaviGAtor - Georgia DOT

- Partners - Atlanta TMC, TCCs, MARTA, emergency response, police, 911
- Data - speed, volume, occupancy, headway, 3 vehicle classes, LOS, stopped vehicles
- Users - Atlanta Regional Commission, EPA, Georgia Tech, private citizens

Example of Findings

- One 4-mile section has 1/2 total delay
- 3/4 of delay occurs in AM or PM peaks
- AM reliability better than PM
- Unreliability and congestion peak at the same time
- Weekend delay as much as weekday

Seattle Freeway Usage and Performance

- Traffic congestion patterns by facility
- Congestion frequency by time of day and location
- Average travel times, HOV Lane Usage
- Performance trends
- depts.washington.edu/trac/floweval/FlowResults.pdf

MoDOT's TMS

- Transportation Management System
- Decision support system
- Supports operations & planning
- Common location referencing system
- Geographic information system

Nevada FAST ADUS

Freeway and arterial data

- Traffic flow, DMS, ramp meters, incident logs, emergency response, signal phasing
- ITS data warehouse
 - Distributed relational data base management system
 - Data mining, data fusion
 - Metadata

Guidelines for Developing ITS Data Archiving Systems

- Shawn Turner, TTI
- Chapters:
 - Introduction
 - Basic principles of data archiving
 - Summary of technical issues
- tti.tamu.edu/product/catalog/reports/2127-3.pdf

ADUS Standards

- American Society for Testing and Materials (ASTM)
 - E17 Vehicle-Pavement Systems
 - Subcommittee on ADUS
- Types of Standards
 - Guidelines
 - Data Dictionaries

Need traffic data in urbanized areas?

- Check out ITS sources!
 - Traffic management
 - Traveler information
 - Commercial vehicle operations
- AADT from ITS
 - For traffic flow maps etc.
 - For HPMS etc.

ADUS Data Websites

- www.aztech.org (Phoenix)
 - www.georgia-navigator.com
 - www.smarttrek.org (Seattle)
 - www.transguide.dot.state.tx.us
 - c3.thecounter.com (TranStar)
 - transacct.eecs.berkeley.edu (PeMS)
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