



A COMPREHENSIVE SURVEY OF EMERGING TECHNOLOGY FOR NEW YORK METROPOLITAN AREA

Literature Review Report



Category Electronic payment

Sub-category

G53 Operational and Traffic Benefits of E-ZPass to the New Jersey Turnpike

Wilbur Smith Associates

2001

<http://www.benefitcost.its.dot.gov/ITS/benecost.nsf/ID/78B2ACEBB79ED67785256AC0006E29ED>

Tech Type: Electronic toll collection

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Implemented

This study was conducted in September of 2000 to evaluate the New Jersey Turnpike Authority (NJTA) E-ZPass electronic toll collection system

Category Intelligent Transportation Systems (

Sub-category

G17 Assessing the Value of TMCs and Methods to Evaluate the Long Term Effects of ITS: Measuring Congestion, Productivity and Benefit Flow from

David Gillen and Douglas Cooper

2004 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper UCB-ITS-PRR-2004-37.

<http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1639&context=its/path>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

The study carries out an evaluation of TMCs (traffic management centers) using three methodologies; case studies, performance based regressions and time series analysis.

| Perspective | Assessment | Category | Intelligent Transportation Systems (ITS) | Sub-category |
|--------------------|---|-----------------|--|--|
| G48 | Benefits and Costs of Full Operations and ITS Deployment : A 2025 Forecast for Tucson | | | |
| | Federal Highway Administration | | | 2005 |
| | http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE//13978_files/J001.503_Tucson.pdf | | | |
| | <i>Tech Type:</i> | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Prototyped |
| | The results showed the investment in ITS to be cost-efficient returning \$6.30 in benefits for every dollar invested | | | |
| G49 | Benefits and Costs of Full Operations and ITS Deployment : A 2003 Simulation for Cincinnati: Varying Weather and Work Zone Conditions | | | |
| | Federal Highway Administration | | | 2005 |
| | http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE//13979_files/J001.502_Cincy.pdf | | | |
| | <i>Tech Type:</i> | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Prototyped |
| | Results showed the investment in operations and ITS to be cost-efficient returning \$11.80 in benefits for every dollar invested | | | |
| G47 | Benefits and Costs of Full Operations and ITS Deployment : A 2003 Simulation for Seattle | | | |
| | Federal Highway Administration | | | 2005 |
| | http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE//13977_files/J001.501_Seattle.pdf | | | |
| | <i>Tech Type:</i> | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> Benefit-Cost |
| | <i>Applicable to Mode/s:</i> All Road Traffic | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Demonstrated |
| | The results showed the investment in operations and ITS to be cost-efficient returning \$12.20 in benefits for every dollar invested. | | | |

Category Safety and Security

Sub-category

W65 Safety Assessment of Advanced Vehicle Control and Safety Systems (AVCSS)

Ching-Yao Chan, Wei-Bin Zhang

2005 UCB-ITS-PRR-2005-19

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2005/PRR-2005-19.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Safety Verification, Safety Assessment methods, Vehicle Control

Assessment method/s: Technical assessment

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

This project looks into one crucial issue of adopting/deploying adv techn into new vehicles/systems - the safety assessment of AVCSS.

It allowed them to form the tool sets needed for safety assessment, including hazard analysis, component evaluation, architecture definition, verification procedures

W36 Safety Evaluation of Red-Light Cameras—Executive Summary

Federal Highway Administration

2005 Report Summary

<http://www.fhrc.gov/safety/pubs/05049/05049.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Red light cameras

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage:

Objective of this research was to determine the effectiveness of red-light-camera (RLC) systems in reducing crashes.

Category Transit system improvement

Sub-category

G64 Real-time Bus Arrival Information Systems Return-on-Investment Study

Laura Cham, Georges Darido, David Jackson, Richard Laver, Donald Schneck (Booz A

2006

http://www.fta.dot.gov/documents/Final_Report_-_Real-Time_Systems_ROI_Study.doc

Tech Type: Transit information system

Goals Enabled

Tech Enablers:

Assessment method/s: Cost-Benefit

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage: Demonstrated

The objectives of the study include developing a methodology for determining the return on investment of real-time information systems for bus services, examining the relevant technologies

Category Traveler Information System

Sub-category

L64 TravInfo Evaluation (Technology Element) Traveler Information Center (TIC) Study: Operator Response Time Analysis

Mark A. Miller, Dimitri Loukakos

2000

<http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2000/PWP-2000-09.pdf>

Tech Type: Information system

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This report documents the analysis of operator response time that is a significant part of the evaluation because TravInfoTM 's operations are substantially less automated than originally envisioned.

L70 TravInfo Evaluation: Traveler Response Element Broad Area Study: Phase 2 Results Analysis of Wave-2 Survey

Y.B. Yim

2001

<http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2001/PWP-2001-04.pdf>

Tech Type: Information system

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This working paper presents the findings of the post-TravInfo Broad Area study.

L68 TravInfo Evaluation: Traveler Response Element; TravInfo 817-1717 Caller Study; Phase 2 Results

Ronald Koo, Y.B Youngbin Yim

2001

Tech Type: Information system

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This paper presents the findings of the second survey of TravInfo 817-1717 callers. The key findings of the second survey were that it is effective in providing quality information and in maintaining a high customer satisfaction, but not in customer base.

L69 TravInfo Evaluation: Traveler Response Element Willingness to Pay for Traveler Information: Analysis of Wave 2 Broad Area Survey

Louis Wolinetz, Asad J. Khattak, Y.B. Youngbin Yim

2001

<http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2001/PWP-2001-05.pdf>

Tech Type: Information system

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This study analyzes the preferences of automobile and transit travelers' willingness to pay for a high quality advanced traveler information service.

L41 An Evaluation of ATIS Deployment in Minneapolis/St. Paul

Virginia. Dept. of Transportation. Northern Virginia District

2001

<http://www.dcddata.com/path/path.htm>

Tech Type: Information system

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Evaluations of the programs; traveler information and traffic management.

G56 Evaluation of Variable Message Signs in Wisconsin: Driver Survey

Ran, Bin et al

2002

<http://www.benefitcost.its.dot.gov/ITS/benecost.nsf/5c36f979ce2c926a852569bc006c5713/622a6a9>

Tech Type: VMS

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Implemented

Approximately 68 percent of respondents reported adjusting their travel routes based on the travel time or traffic information provided by the DMS system during the winter months

L57 Evaluation of the SmarTraveler Advanced Traveler Information System in the Philadelphia Metropolitan Area
 Patten, M.L. Hallinan, M.P. Pribyl, O. Goulias, K.G. 2003

Tech Type: Information system

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This study determined the value of Advanced Traveler Information Systems (ATIS) to drivers, and the usage and awareness of the SmarTraveler service in the Philadelphia area.

L51 Assessing the benefits of Traveler and Transportation Information Systems
 Kristof, Taryn; Lowry, Mike; Rutherford, G. Scott 2005

<http://depts.washington.edu/trac/bulkdisk/pdf/597.1.pdf>

Tech Type: Information system

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

The purpose of this project was to find an acceptable way to evaluate the benefits of ATIS projects for the WSDOT.

Category Traveler Information Systems

Sub-category

L22 Los Angeles/Ventura Advanced Traveler Information System (ATIS) Evaluation Report
 BOOZ ALLEN HAMILTON INC,1615 Murray Canyon Road, Suite 220, San Diego, Calif 2000

http://www.dot.ca.gov/newtech/showcase/project_reports/la_ventura_atis_evaluation_report_final.pdf

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Other

Applicable to Freight:

Development stage:

Provide the background of LA/Ventura ATIS project and evaluate the ATIS by system performance, cost, institutional impacts, transportation & traveler information management, and transportation system impacts.

| Perspective | Assessment | Category | Traveler Information Systems | Sub-category |
|-------------|--|----------|--|-----------------------------|
| L53 | ATIS Evaluation Framework | | | |
| | Kopf, Jaime M.; Ishimaru, John M.; Hallenbeck, Mark E.. | | | 2005 |
| | http://depts.washington.edu/trac/bulkdisk/pdf/606.1.pdf | | | |
| | <i>Tech Type:</i> | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> Information system | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> |
| | This report documents the results of five Advanced Traveler Information System (ATIS) project evaluations performed for the Washington State Department of Transportation. | | | |

Category Air Quality Improvement and Envir

| Sub-category | Fuel based |
|--------------|---|
| W61 | THE CREED PROJECT: 2003 Toyota Prius Hybrid Conversion to Ethanol |
| | Andy Tan, Ahmed Shebe, Dai Wakahoi, Kazumaza Hirasawa, George Luna, Paul Sulliv |
| | 2003 AET/MSU 489 - 35 |
| | http://www.greenenergynetwork.com/media/studies/prius-e85.PDF |
| | <i>Tech Type:</i> |
| | <i>Tech Enablers:</i> Hybrid system (ethanol/gasoline) |
| | <i>Applicable to Mode/s:</i> |
| | <i>Applicable to Freight:</i> <input type="checkbox"/> |
| | <i>Assessment method/s:</i> |
| | <i>Development stage:</i> |
| | A 2003 Toyota Prius Hybrid-Electric vehicle was tested for operation on E-85 (85% ethanol/ 15% gasoline). Tests were done to determine if the vehicle could be operated safely on E-85 without any alterations. |
| W68 | Vehicle Modeling and Verification of CNG-Powered Transit Buses |
| | J.K. Hedrick, A. Ni |
| | 2004 UCB-ITS-PWP-2004-03 |
| | http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2004/PWP-2004-03.pdf |
| | <i>Tech Type:</i> |
| | <i>Goals Enabled</i> |
| | <i>Tech Enablers:</i> Automated highway systems, compressed natural gas, algorithm, |
| | <i>Assessment method/s:</i> working model of the 40 foot New Flyer Bu |
| | <i>Applicable to Mode/s:</i> |
| | <i>Applicable to Freight:</i> <input type="checkbox"/> |
| | <i>Development stage:</i> Prototyped |
| | Develop a math model for heavy duty vehicles that describes the behavior of the vehicle with compressed natural gas (CNG) engines (vehicle dynamics using vehicle acceleration) |

W24 Sustainable energy systems

European Commission

2004

http://ec.europa.eu/dgs/energy_transport/rtd/6/call_3/doc/2004_tren_3_workprog_61_en.pdf

Tech Type:

Goals Enabled

Tech Enablers: Hybrid vehicles, hydrogen and fuel cells,

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Comprehensive study about energy in Europe: Includes hydrogen and fuel cells for transportation chapter

W66 Integrated Hydrogen and Intelligent Transportation Systems Evaluation for the California Department of Transportation

Timothy E. Lipman, Susan Shaheen (UNIVERSITY OF CALIFORNIA - BERKELEY)

2005 UCB-ITS-PRR-2005-34

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2005/PRR-2005-34.pdf>

Tech Type:

Goals Enabled

Tech Enablers: hydrogen,smart hydrogen refuel, smart parking, smart carsharing,

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Summary of hydrogen initiative in California and analysis of potential synergies between hydrogen energy systems and Intelligent Transportation Systems (ITS)

they believe that a "smart hydrogen refueling" FOT is the most attractive based on timing, technology availability, and potential interest for Caltrans, as well as significant national and global

W40 CMAQ and Alternative Fuel Vehicle Projects

FHWA

2005 Brochure

<http://www.fhwa.dot.gov/environment/cmaqpgs/altfuel/index.htm>

Tech Type:

Goals Enabled

Tech Enablers: Alternative fuel, clean cities

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Shows the benefits of using Alternative fuel vehicles

W26 New Initiatives on Demonstration of Hydrogen for Transport

European Commission

2005 Presentation

http://ec.europa.eu/energy/res/fp6_projects/doc/hydrogen/presentations/hydrogen_for_transport.pdf

Tech Type:

Goals Enabled

Tech Enablers: Hydrogen and Fuel Cells Strategy, hydrogen supply infrastructure **Assessment method/s:** Demonstrated in a bunch of cities in Europ

Applicable to Mode/s: **Applicable to Freight:** **Development stage:** Demonstrated

Present expectation for hydrogen in transportation. Also analyses the feasibility of hydrogen supply infrastructure and show examples in buses, cars and minitransport.

W27 A Hydrogen Fuel Cell Bus Project in Europe 2001 – 2006

2006 Prepared for the CUTE Project - European Commission

<http://www.fuel-cell-bus-club.com/index.php?module=pagesetter&func=viewpub&tid=1&pid=160>

Tech Type:

Goals Enabled

Tech Enablers: hydrogen fuel cell buses and the hydrogen supply infrastructure **Assessment method/s:** The buses have operated quietly for more

Applicable to Mode/s: Bus Transit **Applicable to Freight:** **Development stage:** Implemented

Presents a summary of achievements in the use of hydrogen as fuel for buses. The plan is to have around 200 vehicles.

W22 Biofuels for Transport: The action of the European Commission in the field of Biofuels

European Commission - Directorate-General for Energy and Transport

2006

http://ec.europa.eu/energy/res/fp6_projects/doc/amf/presentations/amf_policy_stockholm.pdf

Tech Type:

Goals Enabled

Tech Enablers: Biofuels: bioethanol, biodiesel and biomethane **Assessment method/s:**

Applicable to Mode/s: All Road Traffic **Applicable to Freight:** **Development stage:**

A presentation of European legislation and policies for biofuels

W69 Alternative Fuels Study: A Report to Congress on Policy Options for Increasing the Use of Alternative Fuels in Transit Vehicles

United States Department of Transportation

2006

http://www.fta.dot.gov/documents/Alternative_Fuels_Study_Report_to_Congress.pdf

Tech Type:

Goals Enabled

Tech Enablers: Diesel: ultra-low-sulfur diese and particulate filters, vehicles with h **Assessment method/s:**

Applicable to Mode/s: **Applicable to Freight:** **Development stage:**

Comprehensive study of fuels in the US: current practices, short-term (i.e.: diesel reduction of emmissions) and future trends. Also include policies.

W64 Clean Hydrogen for Transportation Applications: Report

Marshall Miller, Jonathan Weinert, Michael Nicholas (University of California, Davis)

2006 UCB-ITS-PWP-2006-05

<http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2006/PWP-2006-05.pdf>

Tech Type:

Goals Enabled

Tech Enablers: hydrogen fuel station, hydrogen, on-site production of hydrogen (w **Assessment method/s:**

Applicable to Mode/s: **Applicable to Freight:** **Development stage:** Conceptualized

This report was written to provide Caltrans information on the design and cost of various hydrogen station types and to be used as a guide for choosing the station type and size, required hardware, etc.

W28 Green gas in Gothenburg

Polis Coordinator

2007

http://www.eltis.org/study_sheet.phtml?study_id=1296&lang1=en

Tech Type:

Goals Enabled

Tech Enablers: Green gas / Bio gas **Assessment method/s:**

Applicable to Mode/s: All Road Traffic **Applicable to Freight:** **Development stage:** Implemented

Gothenburg produces biogas from sewage, mixes it with air and feeds it un-purified into the cooking gas grid. Once the purification plant is ready, the upgraded biogas is fed into the vehicle gas grid.

W38 Intelligent Transportation System Field Operational Test Cross-Cutting Study Emissions Management using its Technology

Booz Allen and Hamilton

1998

<http://www.fhwa.dot.gov/tfhrc/safety/pubs/its/pabroch/fotemissions.pdf>

Tech Type:

Goals Enabled

Tech Enablers: ITS Tech, remote infrared sensing devices, light detection and ran

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Implemented

The report summarizes the evaluation of emerging technoloidies to measure emissions and control them. The remote sensing device analyzes carbon monoxide content and the light detection device measures the amount and character of pollution in the air

W25 Remote Measurement of Vehicle Emissions at Low Cost

Sira Ltd in partnership with EU research insitutions + universities

1999 FINAL TECHNICAL REPORT - European Commission

Tech Type:

Goals Enabled

Tech Enablers: Remote measurement Vehicle Emissions, Remote sensing device

Assessment method/s: Prototypes tested

Applicable to Mode/s:

Applicable to Freight:

Development stage: Prototyped

Remote sensing devices used to monitor and measure vehicle emissions

http://ec.europa.eu/transport/roadsafety/publications/projectfiles/reveal_en.htm

W35 Remote Emissions Sensing

BerkeleyInstitute of Transportation Studies at

2003

http://www.calccit.org/itsdecision/serv_and_tech/Remote_Emissions_sensing/remote_emissions

Tech Type:

Goals Enabled

Tech Enablers: Remote Emissions Sensing, infrared spectroscopy,

Assessment method/s: Implemented in US: New Mexico, North C

Applicable to Mode/s:

Applicable to Freight:

Development stage: Implemented

Status of the use of remote sensing devices to monitor emissions

W21 Remote Sensing and Spatial Information Technologies for Transportation Decision Making

Mississippi State University 2004

<http://www.acsm.net/sessions04/OharaPhotogrammetry42004.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Remote Sensing / Spatial Information/ GIS

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Ideated

Remote sensing and spatial information (RSSI) technologies to improve transportation planning and management (corridor planning process mainly)

Sub-category *Vehicle based*

W18 Final update report of the Cleaner Vehicles Task Force

Department for Transport, UK 2005

<http://www.dft.gov.uk/pgr/roads/environment/cvtf/finalupdatereportofthecleaner3791>

Tech Type:

Goals Enabled

Tech Enablers: Cleaner Vehicles Task Force: Efficient cars / alternative fuels: elec **Assessment method/s:**

Applicable to Mode/s: Auto

Applicable to Freight:

Development stage:

The Cleaner Vehicles Task Force (CVTF) was established by the Government in 1998 to encourage the manufacture, purchase and use of vehicles which are cleaner, quieter, more fuel-efficient and less resource intensive to produce.

W59 HONDA ANNUAL REPORT: Environmental and Safety

HONDA 2006 Annual Report

<http://world.honda.com/investors/annualreport/2006/08.html>

Tech Type:

Goals Enabled

Tech Enablers: Motorcycles:Programmed fuel injection, Super-low friction engine, **Assessment method/s:**

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Short term projects presented in the annual report

W29 Electric vehicles in the Municipality of Reggio Emilia

Comune di Reggio Emili

2006

<http://www.municipio.re.it/ambiente/infoamsito.nsf/36A7E79FF0233917C1256E9A003B59EA/089B>

Tech Type:

Goals Enabled

Tech Enablers: Electric cars

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Implemented

Initiative in Italy, the Comune di Reggio Emili is currently using electric cars for municipal services, for home assistance to elderly and disabled persons and to trade operators

Category Congestion Reduction and Managem

Sub-category

G67 Ten Strategies for Freeway Congestion Mitigation with Advanced Technologies

Carlos F. Daganzo, Jorge Laval, Juan Carlos Muñoz

2002 California PATH Publications

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2002/PRR-2002-03.pdf>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Conceptualized

This report presents ten strategies for improving freeway performance that have become feasible with the advent of new software and hardware technologies for traffic control.

Sub-category

Congestion pricing

G80 Congestion charging: Technical options for the delivery

P.T. Blythe

2005 Transportation Research Part A Vol 39

http://www.sciencedirect.com/science?_ob=MIimg&_imagekey=B6VG7-4G4MMG2-1-F&_cdi=6031&

Tech Type:

Goals Enabled

Tech Enablers: Dedicated short-range communications (DSRC) systems, Wide-area

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage:

The paper considers how competing initiatives for road-use charging in the UK are evolving, how technical and interoperable convergence may be possible in the future and what impact charging may have on future transport policy in the UK.

314 Congestion pricing technologies: Synthesis and an evaluation framework

Ukkusuri, S. V., Karoonsoontawong, A., Waller, S. T., and Kockelman, K.

2005 Proceedings of 84th Transportation Research Board Meeting

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s: ELECTRE IV

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This paper discusses congestion pricing technology experiences while identifying different performance criteria for evaluation.

G75 London Congestion Charging Technology Trials Stage 1 report

Transport for London

2005

<http://www.tfl.gov.uk/assets/downloads/technology-trials.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Cameras and automatic number plate recognition (ANPR)

Assessment method/s: Proof of concept of the technologies trial

Applicable to Mode/s: Auto

Applicable to Freight:

Development stage: Prototyped

how new technology could support the existing Central London Congestion Charging Scheme? how new technology could support more advanced congestion charging schemes, which might in future replace or supplement the existing approach.

G51 Congestion charging: Technical options for the delivery of future UK policy

P.T. Blythe

2005 Transportation Research Part A: Policy and Practice
 Transportation Research Part A: Policy and Practice

http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VG7-4G4MMG2-1&_coverDate=11

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Conceptualized

looking at the feasibility of introducing a National road user charging system to fully or partially replace fixed car-tax and fuel-duty. This raises challenges both of a political and technical nature which are discussed in the paper.

G50 Flexible Charge Measures Used on Toll Roads: An Analysis of Demonstration Projects in Japan

Matsuda, Waka ; Tsukada, Yukihiro ; Kikuchi, Masahiko

2005 Transportation research record. No. 1932 (2005), p. 137-146

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Implemented

The goals were to promote the effective use of roads by encouraging traffic to switch from general purpose roads to toll roads. This study analyzes the results of the 22 projects.

G76 London Congestion Charging Technology Trials Stage 2 report

Transport for London

2006

<http://www.tfl.gov.uk/assets/downloads/congestion-charges-technology-trials-091006.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Dedicated Short Range Communications (DSRC), Satellite navigation

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Prototyped

the overall conclusion is that DSRC is feasible for operating a congestion charging scheme in an urban environment. distance-based charging in an urban environment may not be practical at present.

G41 Congestion charging mechanisms for roads, Part I - Conceptual framework, Part II - Case studies

Timothy D. Hau

2006 Transportmetrica, 2 (2), 87-152

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s: cost per transaction of operating a system

Applicable to Mode/s:

Applicable to Freight:

Development stage:

1) cordon pricing using manual tollbooths, 2) supplementary licensing, 3) off-vehicle recording systems such as automatic vehicle identification, commonly known as AVI, and 4) on-vehicle charging systems such as smart card technology.

G39 Congestion control of heavy vehicles using electronic road pricing : The Singapore experience

Leo Tan Wee Hin and R. Subramaniam.

2006 Heavy vehicle systems. Vol. 13, no. 1/2 (2006), p. 37-55.

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Trucks

Applicable to Freight:

Development stage: Implemented

the technology permits structuring of pricing regimes based on time of day, point of entry into the road network and class of vehicle.

G77 Distance Based Charging: Summary Report on Transport for London's GPS OBU trial

Transport for London

2006

<http://www.tfl.gov.uk/assets/downloads/GPS-OBU-trials.pdf>

Tech Type:

Goals Enabled

Tech Enablers: GPS

Assessment method/s:

Applicable to Mode/s: Auto

Applicable to Freight:

Development stage: Demonstrated

experience and learn from the GPS-based road pricing systems currently available from the vendor community and to assess their suitability for practical road user charging schemes.

G45 Modelling and evaluation of road pricing in Paris

Andre DePalma

2006 Transport policy. Vol. 13, no. 2 (Mar. 2006) p. 115-126.

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Conceptualized

Welfare gains from the link and cordon tolls are relatively small. The comprehensive travel-time-based toll yields much higher benefits.

G43 A comparative analysis of US toll policy

Jose Holguin-Veras, Mecit Cetin, Shuwen Xia

2006 Transportation research. Part A, Policy and practice. Vol. 40A, no. 10 (Dec. 2006), p. 852-871.

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

The overall objective of this paper is to analyze the toll data from various facilities across the US to gain insight into the overall factors affecting the tolls.

G40 Norway's urban toll rings : evolving towards congestion charging?

P. Ieromonachou, S. Potter, J.P. Warren

2006 Transport policy. Vol. 13, no. 5 (Sept. 2006) p. 367-378.

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Implemented

There are now around 30 such projects in operation around the country. This paper examines the urban toll ring projects and presents results from new research into the schemes in Norway's three largest cities: Oslo, Bergen and Trondheim.

G42 Implementing congestion pricing on metropolitan highway networks with self-financing public-private partnerships

Patrick DeCorla-Souza

2006 Journal of the Transportation Research Forum.
Vol. 45, no. 1 (Spring 2006), p. 5-22.

<http://www.trforum.org/journal/viewabstract.php?id=1&PHPSESSID=055cdd6413e699ebf765a4ddfa>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Conceptualized

This paper presents a new public-private partnership model for road pricing applications either at the facility level or on a region-wide highway network.

G59 Road Pricing: Congestion Pricing, Value Pricing, Toll Roads and HOT Lanes

Victoria Transport Policy Institute

2007

<http://www.vtpi.org/tdm/tdm35.htm>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This chapter describes various types of road pricing including case studies and evaluation techniques.

G74 Central London congestion charging impacts monitoring - fifth annual report

Transport for London

2007

<http://www.tfl.gov.uk/assets/downloads/fifth-annual-impacts-monitoring-report-2007-07-07.pdf>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s: reduced levels of traffic, generated net rev

Applicable to Mode/s:

Applicable to Freight:

Development stage: Implemented

commentary on the development of post-charging trends and the significance of charging to them, as well as comparisons with conditions before charging started in 2002. provides a fuller analysis and valuation of the benefits

A cost-benefit analysis of the central London scheme suggests that the identified benefits exceeded the costs of operating the scheme by a ratio of around 1.5 with an £5 charge, and by a ratio of 1.7 with an £8 charge.

G79 ADVANCED TECHNOLOGIES FOR ROAD USER CHARGING

Zeina Nazer and Andrew Pickford

2007 TRB 2007 Annual Meeting

Tech Type:

Goals Enabled

Tech Enablers: satellite GPS, Automatic Number Plate Recognition (ANPR) syste **Assessment method/s:** critical analysis

Applicable to Mode/s: Auto **Applicable to Freight:** **Development stage:** Conceptualized

paper presents a critical analysis of advanced charging and enforcement technology options and shows the future direction of technology evolution.

Enforcement regimes now depend on image-based evidential capture rather than barriers. Toll plazas are also being replaced by Open Road Tolling (ORT) and Multi Lane Free Flow (MLFF) solutions.

Sub-category *Electronic freight management*

L12 Trends in the Use of Intermodal Freight Identification Technology

Michael Wolfe

1998

http://www.ops.fhwa.dot.gov/freight/intermodal/trends/trends_1.htm

Tech Type:

Goals Enabled

Tech Enablers: freight identification technologies **Assessment method/s:**

Applicable to Mode/s: Transit **Applicable to Freight:** **Development stage:** Implemented

Discusses trends in freight identification technologies with the focus on the use of such technologies.

L11 Freight Information Highway and Cargo Visibility Prototype

Randy Butler

2002

http://www.ops.fhwa.dot.gov/freight/freight_news/info_highway/freight_info.htm

Tech Type:

Goals Enabled

Tech Enablers: Information highway **Assessment method/s:**

Applicable to Mode/s: Transit **Applicable to Freight:** **Development stage:** Prototyped

Introduce a prototype deployment which integrates third-generation chassis tracking system with internet-based intermodal freight logistics applications to provide end-to-end cargo visibility.

L13 Freight Information Real-Time System for Transport

J. Srour (SAIC), J. Kennedy (SAIC), M. Jensen (SAIC), C. Mitchell (SAIC)

2002

http://www.itsdocs.fhwa.dot.gov/JPODOCS/REPTS_TE//13951.html

Tech Type:

Goals Enabled

Tech Enablers: FIRST Web site—www.firstnynj.com

Assessment method/s:

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage: Demonstrated

Demonstrate the factors which result in the low usage of the FIRST intermodal freight ITS prototype system. Demonstrate via simulation the benefits of the FIRST system incorporate a truck appointment system.

L3 Electronic Intermodal Supply Chain Manifest Freight ITS Operational Test Evaluation

Mark Jensen (SAIC), Mike Williamson (Cambridge Systematics), Robert Sanchez

2002

http://www.itsdocs.fhwa.dot.gov/JPODOCS/REPTS_TE/13769_files/13769.pdf

Tech Type:

Goals Enabled

Tech Enablers: An electronic supply chain manifest system for air cargo.

Assessment method/s:

Applicable to Mode/s: Trucks

Applicable to Freight:

Development stage: Implemented

This report presents the secure electronic supply chain manifest provides the secure transfer of information from manufacturer to motor carrier to airline. In addition, the industry time is saved by using this system.

L10 Electronic Cargo Seals: Context, Technologies, And Marketplace

Michael Wolfe, River Consulting Group

2002

http://www.ops.fhwa.dot.gov/freight/publications/eseal_wp_final_july12/eseal_wp_final_01.htm

Tech Type:

Goals Enabled

Tech Enablers: Electronic cargo seal

Assessment method/s:

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage: Implemented

This paper first describes the background of traditional cargo seals, then shows the rationale for electronic seals, the expectations of users, and the characteristics of such seals. Product matrices summarizes specific products by firms and technologies.

L6 Northwest International Trade Corridor Program Phase Three: Electronic Container Seals Field Operational Test Project: task 2--Technology Revi
 TransCore 2003

http://depts.washington.edu/trac/freight/pdf/eseal/NWITCPhase2TechnologyReviewReport_F.pdf

Tech Type: Electronic Container Seals **Goals Enabled** Congestion reduction and safety

Tech Enablers: **Assessment method/s:**

Applicable to Mode/s: Transit **Applicable to Freight:** **Development stage:** Prototyped

Review related secure freight management systems, related technologies and standards, and the application of existing prototype electronic container seal initiatives, projects and programs.

L7 Northwest International Trade Corridor Program Phase Three:Electronic Container Seals Field Operational Test Project: task 3-- Operational Req
 TransCore 2003

<http://depts.washington.edu/trac/freight/pdf/eseal/NWITCPhase3OperationalRequirementsConceptP>

Tech Type: **Goals Enabled**

Tech Enablers: Electronic Seal **Assessment method/s:**

Applicable to Mode/s: Transit **Applicable to Freight:** **Development stage:** Prototyped

Identify the functional operational requirements and concept of operations that a seal or family of seals should support to be effective when deployed in a secure Freight Management System.

L9 Technologies for vehicle, operator and cargo identification

Michael S. Bronzini,Pranav Dave

2004 CIPP Workshop II

<http://www.civil.gmu.edu/HomelandSecurity/pdf/bronzini.pdf>

Tech Type: **Goals Enabled**

Tech Enablers: Electronic dientification technologie and wireless communication s **Assessment method/s:**

Applicable to Mode/s: Transit **Applicable to Freight:** **Development stage:** Implemented

This paper reviews some of the current as well as future technologies related to create a system which can positively and quickly identify transportation vehicles, operators, and cargo

L16 The Freight Technology Story: Intelligent Freight Technologies and Their Benefits

Michael Wolfe and Kenneth Troup, The North River Consulting Group 2005

http://pagebang.com/cgi/nph-proxy.cgi/111011A/http/ops.fhwa.dot.gov/freight/intermodal/freight_tec

Tech Type:

Goals Enabled

Tech Enablers: All intelligent freight technologies

Assessment method/s:

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage: Conceptualized

The report discusses the innovation and implementation processes for intelligent freight technologies, triggers for and barriers to deployment, the types of intelligent freight technologies, and their benefits, and field operational test results.

L8 Electronic Supply Chain Manifest Benefit Calculations – Revised December 2005

Science Applications International Corporation 2005

http://www.its.dot.gov/efm/docs/EFM_benefits.htm

Tech Type:

Goals Enabled

Tech Enablers: Electronic information exchange

Assessment method/s:

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage: Demonstrated

Present the benefits of Electronic Supply Chain Manifest: Reduced manifest preparation time. Reduced paperwork handling time. Reduced time in communicating with up- and down-stream intermodal partners. Reduce load transfer time between partners

L15 Real-time asset management for railroad freight: the RFTTrax Opportunity

Joshua Greenbaum, Enterprise Applications Consulting 2006

<http://www.eaconsult.com/articles/RFTTraxEACReport.pdf>

Tech Type:

Goals Enabled

Tech Enablers: ERP(enterprise resource planning) systems, RFID (radio frequency

Assessment method/s:

Applicable to Mode/s: Rail Transit

Applicable to Freight:

Development stage: Conceptualized

Demonstrate RFTTrax solution will help the renaissance of the railroad and maximum return on investment(RIO) can be accrued by integrating RFTTrax to an ERP or other back-office

L14 Electronic Freight Management (EFM) Standards Strategy

Michael P. Onder

2006

http://www.ops.fhwa.dot.gov/freight/intermodal/freight_info/efm_standards/index.htm

Tech Type: Information system

Goals Enabled Congestion reduction and management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage: Demonstrated

Evaluate and build data standard.

L2 Columbus Electronic Freight Management (CEFM) Detailed Design Document (Version 2.0)

Battelle the business of innovation and transentri

2006

http://www.fih-dot.com/CEFM_DDD_v2.0.pdf

Tech Type:

Goals Enabled

Tech Enablers: All the components of the "freight information highway" necessary

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Prototyped

The report provides the detailed design of the CEFM system that will be deployed for The Limited Brands and their supply chain partners.

L1 The electronic freight Management Initiative

David Fitzpatrick and Daniel Dreyfus, Booz Allen Hamilton

2006

http://www.its.dot.gov/efm/efm_pubs.htm

Tech Type:

Goals Enabled

Tech Enablers: Web technologies

Assessment method/s:

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage: Implemented

The report presents the approach, components, and products of Electronic Freight Management (EFM) initiative. It also discusses the benefit of using EFM concept and data standard.

G94 SMART NETS: Signal Management in Real Time for urban traffic NETWORKS

Napier University

2004

http://www.smart-nets.napier.ac.uk/D26_final.pdf

Tech Type:

Goals Enabled

Tech Enablers: Trafficresponsive Urban Control

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Demonstrated

Trafficresponsive Urban Control was successfully installed, verified and demonstrated in three test sites of varying network and traffic characteristics: in Chania, Southampton and Munich.

G7 Anonymous Vehicle Tracking for Real-Time Freeway and Arterial Street Performance Measurement

Ritchie et al.

2005 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper prr-2005-9.

<http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1666&context=its/path>

Tech Type:

Goals Enabled

Tech Enablers: Loop detectors

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Demonstrated

a framework for studying the feasibility of an anonymous vehicle tracking system for real-time freeway and arterial traffic surveillance and performance measurement.

W2 Stochastic adaptive control model for traffic signal systems

X.-H. Yu, W.W. Recker

2006 Transportation Research Part C 14 (2006) 263–282

Tech Type:

Goals Enabled

Tech Enablers: Algorithms

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Prototyped

An adaptive control model of a network of signalized intersections is proposed based on a discrete-time, stationary, Markov decision process

No tested yet

G2 Motorway Access Management: Smoothing your journeys on England's motorways

2007

<http://www.highways.gov.uk/knowledge/9150.aspx>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Access management strategy in UK. The HA has carried out trials of the access management scheme on the M6 and M27. A £6m national implementation plan is now in place to introduce access management at slip roads across 30 locations

Sub-category *Incident management*

G20 Evaluation of the Bay Area Incident Response System (BAIRS)

Michael Mauch, Koohong Chung, Soyoung Ahn, Alexander Skabardonis

2006 UCB-ITS-PRR-2006-01

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2006/PRR-2006-01.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Sensors, web and GIS based system

Assessment method/s: incident response and clearance times, Inc

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Implemented

incident response and clearance times were reduced by about 15%. Incident related delays were reduced by 210,000 vehicles-hours annually. The estimated BAIRS benefit-cost ratio is 5:1

Sub-category *Intelligent Transportation Systems (ITS)*

G93 NETMOBIL: New transport system concepts for enhanced and sustainable personal urban mobility

Transportation Research Group (TRG), Centro di Ricerca Trasporti (CIRT), IABG, INRI

2007

http://www.netmobil.org/resources/d07_exec.htm

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Prototyped

NETMOBIL will form a Cluster of research activities within the fields of automated vehicles, personal rapid transit, advanced driver assistance systems, automated vehicle guidance systems and their underlying technologies

Sub-category *Inter-modal transfer technologies*

G90 Innovative Technologies for Inter-modal Transfer Points Innovative Technologies: Inventory and Expert System on new technologies in intermoda
 Dr. Athanasios Ballis, Tatiana Moschovou 2002

http://eutp.org/download/itip_deliverables/D4-final.pdf

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Intermodal

Applicable to Freight:

Development stage:

consolidate, present, identify the success and failure factors and exploit the best practises of advanced transhipment system applications.

Sub-category Parking management

G61 Parking Systems Technologies
 Lauren Smith and Hans Roth 2003 Institute of Transportation Studies at
 the University of California at Berkeley and Caltrans
http://www.calccit.org/itsdecision/serv_and_tech/Parking_Systems_Technologies/parking_systems

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Primer on parking systems technologies

G36 Applying Integrated ITS Technologies to Parking Management Systems: A Transit-Based Case Study in the San Francisco Bay Area
 Susan Shaheen, Caroline Rodier, Amanda Eaken 2004 2004 ITS World Congress

<http://database.path.berkeley.edu/imr/papers/UCD-ITS-RR-04-18.pdf>

Tech Type:

Goals Enabled

Tech Enablers: traffic sensors, advanced and en-route reservation system access

Assessment method/s:

Applicable to Mode/s: Auto

Applicable to Freight:

Development stage: Demonstrated

The results of an extensive literature review demonstrate that different smart parking applications implemented worldwide can ease traveler delays, increase transit ridership, and reduce operator costs.

Survey showed significant commuter frustration with parking shortages, importance of accurate parking counts and parking enforcement, and the potential for greater transit use

G9 Smart Parking Management Pilot Project: A Bay Area Rapid Transit (BART) District Parking Demonstration

Susan Shaheen, Caroline Rodier, and Amanda M. Eaken

2005 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper prr-2005-5.

<http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1663&context=its/path>

Tech Type:

Goals Enabled

Tech Enablers: Vehicle detectors, internet, VMS

Assessment method/s:

Applicable to Mode/s: Auto

Applicable to Freight:

Development stage: Implemented

This report presents early findings from an application of advanced parking technologies to maximize existing parking capacity

Sub-category *Pedestrian and bicycle systems*

W1 Intelligent traffic signals for pedestrians: evaluation of trials in three countries

M.J.Carsten, D.J.Sherborne, J.A.Rothengatter

1998 Transportation Research Part C 6 (1998), 213- 229

Tech Type:

Goals Enabled

Tech Enablers: Microwave detectors

Assessment method/s: Tested in Leeds (UK), Porto (Portugal) an

Applicable to Mode/s: Pedestrians

Applicable to Freight:

Development stage: Demonstrated

VRU-TOO (Vulnerable User Traffic Observation and Optimization): Microwave detectors mounted on traffic signals to register approach of pedestrians. Advantages: prediction gives some gain to pedestrian instead of pressing the button.

Sub-category *Telecommute*

322 The Quite Success: Telecommuting Impact on Transportation and Beyond

Ted Balaker

2005

<http://www.reason.org/ps338.pdf>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Other than driving alone, telecommuting is the only commute mode that has gained market share since 1980. 4.5 million Americans telecommuting most work days, roughly 20 million telecommuting at least once per month, 45 million once a year strong social trends suggest that telecommuting will become even more prevalent in the future.

Sub-category *Transit system improvements*

G34 EasyConnect II: Integrating Transportation, Information, and Energy Technologies at Transit Oriented Developments

Susan Shaheen, Caroline Rodier, and Joshua Seelig

2005 Transportation Research Board (TRB), 2006

<http://database.path.berkeley.edu/imr/papers/UCD-ITS-RR-05-14.pdf>

Tech Type:

Goals Enabled

Tech Enablers: low-speed mode vehicles; smart parking management systems; el **Assessment method/s:**

Applicable to Mode/s: Transit **Applicable to Freight:** **Development stage:** Demonstrated

The project components include the introduction of shared-use, low-speed mode vehicles; smart parking management systems; electronic lockers; and power supplied by hydrogen fuel cell at the proposed TOD.

G65 Transit Signal Priority (TSP): A Planning and Implementation Handbook

Harriet R. Smith, Brendon Hemily, Miomir Ivanovic, Gannett Fleming, Inc.

2005

<http://www.fta.dot.gov/documents/TSPHandbook10-20-05.pdf>

Tech Type:

Goals Enabled

Tech Enablers: **Assessment method/s:**

Applicable to Mode/s: Transit **Applicable to Freight:** **Development stage:** Demonstrated

A guide book for traffic engineers and transit planners about Transit Signal Priority (TSP) implementation.

W46 Fault Diagnosis and Safety Design of Automated Steering Controller and Electronic Control Unit (ECU) for Steering Actuator

Han-Shue Tan, Fanping Bu, Shiang-Lung Koo and Wei-Bin Zhang

2005 UCB-ITS-PRR-2005-27

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2005/PRR-2005-27.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Precision docking: enables a bus to perform rail like level boarding **Assessment method/s:**

Applicable to Mode/s: **Applicable to Freight:** **Development stage:** Implemented

The bus precision docking seeks to achieve, with the help of electronic guidance technologies, a high docking accuracy and consistency that allows fast loading and unloading of passengers with special needs.

G21 Enhanced Transit Strategies: Bus Lanes with Intermittent Priority and ITS Technology Architectures for TOD Enhancement

Michael Todd, Matthew Barth, Michael Eichler, Carlos Daganzo, Susan A. Shaheen

2006 UCB-ITS-PRR-2006-02

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2006/PRR-2006-02.pdf>

Tech Type:

Goals Enabled

Tech Enablers: ITS technologies

Assessment method/s: Cost-Benefit analysis

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage: Conceptualized

This project report has identified technology bundles and architectures that have the greatest potential for increasing mobility based on transit-oriented development (TOD).

ITS technologies implemented in a well-integrated fashion will promote transit efficiency and convenience and lead to transit usage beyond levels currently observed.

Sub-category

Travel Demand Management

G44 Managing travel demand: applying European perspectives to U.S. practice

FHWA, International Scanning Study Team

2006

<http://international.fhwa.dot.gov/traveldemand/index.htm>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

traveler information, technology, improved modal options, pricing, and new institutional arrangements. The scan team visited Rome, Italy; Stockholm and Lund, Sweden; Cologne, Germany; Rotterdam and Delft, Netherlands; and London, United Kingdom

Sub-category

Travel Demand Management - Car Share

G35 CarLink II: A Commuter Carsharing Pilot Program Final Report

Susan Shaheen, Kamill Wipyewski, Caroline Rodier, Linda Novick, MollyAnne Meyn, Jo

2004 California PATH Research Report, MOU 4104, 2004, 163 pp. UC Berkeley

<http://database.path.berkeley.edu/imr/papers/UCB-ITS-PRR-2004-23.pdf>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Auto

Applicable to Freight:

Development stage: Demonstrated

Pilot objectives included testing an advanced carsharing system, understanding user response to this service, and testing its long-term sustainability.

G33 Worldwide Carsharing Growth: An International Comparison

Susan Shaheen and Adam Cohen

2007 Transportation Research Record (TRR)
Forthcoming, 2007

<http://database.path.berkeley.edu/imr/papers/UCD-ITS-RR-06-22.pdf>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Auto

Applicable to Freight:

Development stage:

This paper is based on 33 carsharing expert surveys collected internationally. Cost savings, convenient locations, and guaranteed parking were identified as the most common motivations for carsharing use worldwide.

Sub-category *Traveler Information Systems*

L17 Advanced Traveler Information Systems: Choosing the Route to Traveler Information Systems Deployment: Factors for Creating Public-Private B

Intelligent Transportation Society of America

1998

<http://www.fhwa.dot.gov/tfhrc/safety/pubs/its/generalits/choosette.pdf>

Tech Type:

Goals Enabled

Tech Enablers: All related ATIS technologies

Assessment method/s:

Applicable to Mode/s: Auto

Applicable to Freight:

Development stage: Demonstrated

An action guide on decision factors that need to be considered while developing a business plan for ATIS implementation

L48 Revenue Models for Advanced Traveler Information Systems

Y.B. Youngbin Yim

2001 CALIFORNIA PATH PROGRAM INSTITUTE OF
TRANSPORTATION STUDIES UNIVERSITY OF
CALIFORNIA. BERKELEY

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2001/PRR-2001-03.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Inforamtion system

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

The paper describes current trends in the traveler information supply system and the prospect for potential markets for advanced traveler information in the United States and Europe

L26 An Advanced Traveler Information System with Emerging Network Technologies
 Chun-Hsin Wu, Da-Chun Su, Justin Chang, Chia-Chen Wei, Jan-Ming Ho 2003
<http://www.csie.nuk.edu.tw/~wuch/publications/2003-itsap-atis.pdf>

Tech Type: *Goals Enabled*
Tech Enablers: Data processing algorithms *Assessment method/s:*
Applicable to Mode/s: *Applicable to Freight:* *Development stage:*

This paper we present a highway ATIS system which provides more decisive and valuable travel information than conventional ATIS systems by integrating it with newly emerging Web service and wireless communication technologies.

L36 Guidance for Developing and Deploying Real-Time Traveler Information Systems for Transit
 2003
http://gulliver.trb.org/news/blurb_detail.asp?id=1827

Tech Type: *Goals Enabled*
Tech Enablers: Transit agencies with considering the implementation of a real-tim *Assessment method/s:*
Applicable to Mode/s: *Applicable to Freight:* *Development stage:*

This study presents a best-practice assessment of the transit industry regarding the development and deployment of real-time traveler information systems.

L28 A Comparison of Mobility Impacts on Urban Commuting Between Broadcast Advisories and Advanced Traveler Information Services
 Meenakshy Vasudevan, Dr. Karl Wunderlich, James Larkin, Alan Toppen 2004
http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE//13968.html

Tech Type: *Goals Enabled*
Tech Enablers: Radio traffic advisories *Assessment method/s:*
Applicable to Mode/s: *Applicable to Freight:* *Development stage:* Implemented

This report explores the effectiveness of relying on commercial radio as a source of traveler information, and presents an approach to quantify mobility benefits from radio traffic advisories.

L23 Managing Demand Through Travel Information Services

2005

http://ops.fhwa.dot.gov/publications/manag_demand_tis/travelinfo.htm

Tech Type:

Goals Enabled

Tech Enablers: Travel information service.

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

This article highlights the exciting potential of advanced traveler information systems with the examples from different countries.

L32 Traveler information integration project within the East Bay SMART Corridors Project

2005

http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE/14127.htm

Tech Type:

Goals Enabled

Tech Enablers: Regional traveler information system, Bus Arrival Information Syst *Assessment method/s:*

Applicable to Mode/s:

Applicable to Freight:

Development stage: Prototyped

This report includes technical details of integration of regional and national ITS standards in Traveler Information for East Bay SMART Corridors Project.

L27 ITS User Services Document

Architecture Development Team

2005

http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE/14113.htm

Tech Type:

Goals Enabled

Tech Enablers: Route guidance, traffic assignment algorithm, Information manage *Assessment method/s:*

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This ITS User Services Document consolidates the descriptions of all 33 current user services into a single document.

L49 Use of Traveler Information to Improve Texas Transportation

C. Michael Walton, Khali Persad, Zhong Wang

2007

http://www.utexas.edu/research/ctr/pdf_reports/0_5079_1.pdf

Tech Type:

Goals Enabled

Tech Enablers: Information system

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This study was initiated by TxDOT to investigate the potential of using Advanced Traveler Information Systems (ATIS) to enhance the operations of both tolled and non-tolled roads.

Category Safety and Security

Sub-category

W34 FMCSA Goals for Expanded CVISN Deployment: a 2004 FMCSA Professional Capacity Building Program presentation on goals for CVO safety

Federal Motor Carrier Safety Administration

2004 Presentation

http://www.pcb.its.dot.gov/T3/session18/T3_S18-19-20.PPT

Tech Type:

Goals Enabled

Tech Enablers: Safety Information Exchange, Driver Information Sharing, Expand

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Implemented

CVISN review and future expansion ideas. CVISN have been implemented in several states.

G86 eScope: eSafety observatory

ERTICO

2006

<http://www.esafetysupport.org/>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

Project to promote the implementation and use of advanced technologies and intelligent transport systems (ITS) for greater road safety throughout Europe.

Project website has information on several projects implemented.

W39 Traffic Safety Information Systems International Scan: Strategy Implementation White Paper

The University of North Carolina

2006 Report

Tech Type:

Goals Enabled

Tech Enablers: XML, Software, Data Bases, on board computers, GIS, image cou **Assessment method/s:**

Applicable to Mode/s: **Applicable to Freight:** **Development stage:**

Scan of how agencies of Netherlands, Germany and Australia use safety traffic information systems. Main concl: easy to collect,store anduse,increase use of dafety analysis tools, protect safety data and linkage of data.

Sub-category

Collision Avoidance

W5 IN-ARTE: Integration of Navigation and Anticollision for Rural Traffic Environment

Institute of Industrial Engineering (IAO) and the Institute of Human Factors and Techno

1998

<http://www.iao.fraunhofer.de/Projects/IN-ARTE/index.html>

Tech Type:

Goals Enabled

Tech Enablers: integrating signals from anticollision radar, road recognition CCD s **Assessment method/s:**

Applicable to Mode/s: Auto **Applicable to Freight:** **Development stage:** Prototyped

Autonomous on-board syst. able to build an extended view of the environm. in front of vehicle.Integrates signals from anticollision radar, road recognition CCD sensors and navigation map.

Guides/warns drivers through intersect. handling,speed select. while negotiations,curves,obstacle detection. They mention they want to extend to Adaptive Cruise Control, Collision Warning, Lane Recognition.

W9 Development of a Collision Avoidance System

Peter Seiler, Bongsob Song, J. Karl Hedrick (University of California-Berkeley)

1998 Society of Automotive Engineers, Inc.

Tech Type:

Goals Enabled

Tech Enablers: Algorithm **Assessment method/s:** Algorithms proposed by Mazda and Honda

Applicable to Mode/s: All Road Traffic **Applicable to Freight:** **Development stage:** Demonstrated

Components A nondimensional warning value to evaluate driving situations.Warning value uses braking/warning critical distances (function of vehicle velocity/relative velocity). Scaling factors to account for variable driver habits/different road cond

W41 Safety and Throughput Analysis of Automated Highway Systems

Anthony Hitchcock - INSTITUTE OF TRANSPORTATION STUDIES - UNIVERSITY OF
<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2000/PRR-2000-01.pdf>

2000 California PATH Research Report - UCB-ITS-PRR-2000-1

Tech Type:

Goals Enabled

Tech Enablers: Automated Highway System, vehicle dynamics, in-vehicle coordin

Assessment method/s: Computational tool to show limitations of b

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Uses two tools, the first estimates the minimum necessary space for two vehicles to not collide and the second investigates multiple collisions that may occur in a string of vehicles if the space of the first tool is violated

W20 Crash Warning System Interfaces: Human Factors Insights and Lessons Learned

Battelle Center for Human Performance and Safety

2007 Report for National Highway Traffic Safety Administration

<http://www-nrd.nhtsa.dot.gov/departments/nrd-12/3839/>

Tech Type:

Goals Enabled

Tech Enablers: Collision Warning Systems, driver-vehicle interface, visual warning

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage:

Review of the human factors literature associated with the effective implementation of crash warning system interfaces; the lessons learned from this literature were characterized in terms of guidelines for interface design and driver performance.

Also includes guidelines specific for heavy truck and bus applications

Sub-category

Communication System

W47 A Multi-channel VANET Providing Concurrent Safety and Commercial Services

Tony K. Mak, Kenneth P. Laberteaux, Raja Sengupta

2005 UCB-ITS-PWP-2005-2

<http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2005/PWP-2005-02.pdf>

Tech Type:

Goals Enabled

Tech Enablers: VANET, multichannel wireless communication architecture,

Assessment method/s: Simulation

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

This solution extends the IEEE 802.11 wireless LAN protocol to schedule periodic safety messages in a "safety channel". It explicitly supports concurrent non-time-critical communications in separate, non-safety "service channels".

W67 Medium Access Control Protocol Design for Vehicle-Vehicle Safety Messages

Qing Xu, Tony Mak, Jeff Ko, Raja Sengupta

2005 UCB-ITS-PWP-2005-4

<http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2005/PWP-2005-04.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Medium Access Control (MAC) protocol design for a vehicle to sen

Assessment method/s: We derive equations and develop a simula

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

The idea of enabling active safety systems by learning the locations and motions of neighboring vehicles using GPS and ad-hoc wireless networking technologies like Wi-Fi.

We show that under certain assumptions on the loss probability tolerated by safety applications, the design is able to transport safety messages in vehicular ad-hoc networks

Sub-category

Crash Assessment

W31 Vehicle Event Recording based on Intelligent Crash Assessment

Siemens

2006 Report for European Commission

http://www.siemensvdo.com/NR/rdonlyres/3E81300F-7BE6-493B-89AE-194CEACD2F8F/0/final_re

Tech Type:

Goals Enabled

Tech Enablers: Vehicle Event Recorder in the car

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

The report explores the use of vehicle event recorders to understand collisions and to use the information for prevention, road safety and legal fairness. Vehicle data recorder monitors the status of the vehicle system (speed,braking,etc)

Complete explanation of vehicle events recorder and its possibilities

Sub-category

Driver Condition Warning

W6 SAVE: System for effective assessment of the driver state and vehicle control in emergency situations

Institute of Industrial Engineering (IAO) and the Institute of Human Factors and Technol

1998

<http://www.iao.fraunhofer.de/Projects/SAVE/save/saveinit.htm>

Tech Type:

Goals Enabled

Tech Enablers: Text display (LCD),Emergency call button,Speech output (attract a

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Demonstrated

Transp.Telematics EU project: develop an integrated system for detecting driver status problems which may indicate an imminent danger of an accident/emergency. The system informs: driver, the surrounding traffic and (if necessary) an Emergency Centre

W4 AWAKE - System for Effective Assessment of Driver Vigilance and Warning According to Traffic Risk Estimation

European Commission - Information Society Technologies

2004

<http://www.awake-eu.org/index.html>

Tech Type:

Goals Enabled

Tech Enablers: A combination of devices such as a mirror device, frontal radar, la

Assessment method/s: Project terminated and tested

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Demonstrated

A system with several subsystems and sensors incorporated in the car: A Hypovigilance Diagnosis Module that detects and diagnoses driver hypovigilance in real-time. A Traffic Risk Estimator and A Driver Warning Systems (visual, acoustic, etc).

This is the result of a project of the European Commission in collaboration with research institutions, universities and car companies. Tested in 7 countries with acceptance rating 70-87% and usefulness 90-100%.

Sub-category

Emergency response

G84 E-MERGE: Developing the pan-European harmonised in-vehicle emergency call service chain

ERTICO

2004

http://www.gstforum.org/en/subprojects/rescue/about_gst_rescue/introduction/e-merge.htm

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

The E-MERGE project is working to develop an in-vehicle emergency call solution that will ensure a manual or automatic call for assistance arrives at the PSAP (Public Safety Answering Point) in a fast and reliable manner

Sub-category

Evaluation

W30 An Evaluation of the Impacts of ITS/CVO Technologies on Safety and the Associated Benefits Throughout the Supply Chain, Phase I: A Review of

Brenda M. Lantz - North Dakota State University

2000

<http://www.mountain-plains.org/pubs/pdf/MPC01-117A.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Intelligent Transportation

Assessment method/s:

Applicable to Mode/s: Trucks

Applicable to Freight:

Development stage:

Literature Review / Case studies of application of Intelligent Transportation in freight operations

W42 Safety Evaluation of Vehicle Following Operations by Fault Tree and Sensitivity Analysis

Ching- Yao Chan - INSTITUTE OF TRANSPORTATION STUDIES UNIVERSITY OF C

2000 Final Report of MOU 325

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2000/PRR-2000-18.pdf>

Tech Type:

Goals Enabled

Tech Enablers: fault tree models, advanced vehicle control systems

Assessment method/s: This research project utilizes commercially

Applicable to Mode/s:

Applicable to Freight:

Development stage: Implemented

1) Development of fault tree models for safety evaluation of advanced vehicle (2) Utilization of an off-the-shelf fault tree tool to conduct fault tree analysis, such as control and safety systems

Also for lane keeping

W33 Evaluation Of The I-95 Commercial Vehicle Operations Roadside Safety & SAFER Data Mailbox Field Operational Tes

DOT

2002

http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE//13787.html

Tech Type:

Goals Enabled

Tech Enablers: The Safety and Fitness Electronic Record (SAFER) Data Mailbox (

Assessment method/s: Evaluation in corridor I-95

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

A real-time data exchange system that enables roadside enforcement staff to submit commercial vehicle inspection results to a centralized database (SAFER) and to obtain prior inspection reports from other locations

W50 A Tool to Evaluate the Safety Effects of Changes in Freeway Traffic Flow

Thomas F. Golob, Wilfred W. Recker, Veronica M. Alvarez - University of California, Irvi

2003 UCB-ITS-PWP-2003-9

<http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2003/PWP-2003-09.pdf>

Tech Type:

Goals Enabled

Tech Enablers: loop detectors, software tool (FITS), algorithm

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Describes a tool developed for assessing changes in traffic safety tendencies resulting from changes in traffic flow. It uses data from single inductive loop detectors, converting obs and occupancy into traffic flow regimes

L5 Electronic Container Seal Field Operational Test Project: System Interoperability Feasibility Study

The Trade Corridor & Border Crossing Group

2004

http://depts.washington.edu/trac/freight/pdf/eseal/Interoperable_Feasibility_StudyFinal030504.pdf

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage: Conceptualized

Identify the technical approaches to accommodating the feasibility of developing and deploying an interoperable, national Secure Freight Management System.

Sub-category

Grade Crossing

W44 Improved Grade Crossing Safety with In-Pavement Warning Lights

Theodore E. Cohn

2005

<http://database.path.berkeley.edu/reports/index.cgi?reqtype=displayrecord&record=236>

Tech Type:

Goals Enabled

Tech Enablers: in-pavement warning system, LEDs

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

The focus of this project is the modification of a commercially available in-pavement warning signal that was evolved from one originally designed to indicate the presence of pedestrians in a crosswalk.

W58 Improving Safety and Operations of Traffic Signals Near Railroad Grade Crossings with Active Warning Devices

Kevin N. Balke, Roelof J. Engelbrecht, Srinivasa R. Sunkari,

2005 Texas Transportation Institute

<http://tti.tamu.edu/documents/0-4265-S.pdf>

Tech Type:

Goals Enabled

Tech Enablers: improving the operation of traffic signal controllers near highway-r

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

researchers conducted a survey of operations engineers and practitioners in Texas and in key locations across the United States to determine the paramount safety and operational issues relating to highway railroad grading crossings

Sub-category

Hazardous materials safety

W37 Hazardous Materials Safety and Security Technology Field Operational Test

2004

http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE/14094_files/exec-summ.htm - overview

Tech Type: *Goals Enabled*
Tech Enablers: Wireless-MobileCommunications(GPS/DigPhone),In-Vehicle Tech *Assessment method/s:*
Applicable to Mode/s: *Applicable to Freight:* *Development stage:*
 Evaluation of the technology currently used for hazardous materials catastrophic events

Sub-category Lane Change and Merge Collision Avoidance

W11 Development of Performance Specifications for Collision Avoidance Systems for Lane Change, Merging and Backing

Sam Talmadge, Dave Dixon, Bill Quon - TRW Space and Electronics Group

1997 DOT HS 808 - Interim Report

http://filebox.vt.edu/users/eolsen/files/lane_change_docs/talmadge_dixon_quon_1997.PDF

Tech Type: *Goals Enabled*
Tech Enablers: the scanning laser and the eye tracker *Assessment method/s:* Prototyped and tested
Applicable to Mode/s: Auto *Applicable to Freight:* *Development stage:* Demonstrated

Scanning laser (on the right rear corner of car) generate trajectories of passing cars, and categorize them. Eye tracker track the driver gaze direction providing a continuous record of gaze direction as driver executes a lane change/merge maneuver

Sponsor: National Highway Traffic Safety Admin. (NHTSA)
 Office of Collision Avoidance Research (OCAR)

W12 Collision Avoidance Analysis for Lane Changing and Merging

Hossein Jula, Elias B. Kosmatopoulos, and Petros A. Ioannou

2000 IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY, VOL. 49, NO. 6, NOVEMBER 2000

<http://www-rcf.usc.edu/~ioannou/2003update/d61.pdf>

Tech Type: *Goals Enabled*
Tech Enablers: Analysis of kinematics of the vehicles involved in a lane changing/ *Assessment method/s:* Simulations of a number of examples of la
Applicable to Mode/s: Auto *Applicable to Freight:* *Development stage:* Demonstrated

Lane change/merge scenario calculate the minimum longitudinal spacing which the vehicles involved should initially have so that no collision takes place during the maneuver

Sub-category Pedestrian safety

G52 Evaluation of Automated Pedestrian Detection at Signalized Intersections

Hughes, Ronald, et al

2001 REPORT NO. FHWA-RD-00-097

http://www.walkinginfo.org/task_orders/to_11/peddetec.pdf

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Pedestrians

Applicable to Freight:

Development stage: Demonstrated

there was a 24 percent increase in the number of pedestrians who began crossing during the WALK signal, and an 81 percent decrease in the number of pedestrians who began crossing during the steady DON'T WALK signal

Sub-category Road Departure Collision Avoidance

W14 Run-Off-Road Collision

Carnegie Mellon University / Battelle Memorial Institute / Foster Miller, Inc.

1999 DOT HS 809 170

http://www.itsdocs.fhwa.dot.gov/JPODOCS/REPTS_TE//13342.pdf

Tech Type:

Goals Enabled

Tech Enablers: Guidelines, including sensing requirements,

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage:

Lane Drift Warning Syst(LDWS) to warn in case of an unintentional drift out of the travel lane (driver drowsiness/distraction/inattention). Curve Speed Warning Syst(CSWS) to warn if the vehicle is approaching a curve too fast for current condit.

W19 Road Departure Crash Warning System Field Operational Test: Methodology and Results

The University of Michigan Transportation Research Institute

2006

http://www-nrd.nhtsa.dot.gov/pdf/nrd-12/RDCW-Final-Report-Vol.1_JUNE.pdf

Tech Type:

Goals Enabled

Tech Enablers: Lane departure warning, curve speed warning,

Assessment method/s: Tests on cars

Applicable to Mode/s: Auto

Applicable to Freight:

Development stage: Demonstrated

This is the result of testing new technologies in cars for crash avoidance and lane departure warning

Sub-category Security

W10 Designing and Operating Safe and Secure Transit Systems: Assessing Current Practices in the United States and Abroad

Mineta Transportation Institute (San José State University) / co-sponsor UCLA

2005 MTI Report 04-05 / FHWA/CA/OR-2005-107

http://transweb.sjsu.edu/mtiportal/research/publications/documents/04-05/MTI_04-05.pdf

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Contributes to our understanding of transit security by (1) reviewing and synthesizing nearly all previously published research on transit terrorism;(2) conducting detailed case

in London, Madrid, New York, Paris, Tokyo, and Washington, D.C.; (3)

interviewing federal officials responsible for overseeing transit security (4) surveying 113 of the largest transit operators in the United States.

G70 The "PortStat" initiative

2007 News article

<http://www.marinelink.com/Story/ShowStory.aspx?StoryID=207487>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Gather statistics on arrests, complaints, suspicious activities and other intelligence information that would detect criminal, security-breach and terrorist activity trends at airports and seaports around the country.

Sub-category

Vehicular safety technology

W16 Study on the ITS-based Traffic Operation Strategy in Poor Visibility Environment on Inter-Urban Expressways in Japan

Kato, T.

2000 Paper presented at the 7th World Congress Conference on ITS, Turin, Italy

<http://www.itsbenefits.its.dot.gov/its/benecost.nsf/ID/346B56233657D7AB85256A6A00691A0D?Ope>

Tech Type:

Goals Enabled

Tech Enablers:

Radio wave sensors and GPS

Assessment method/s:

Evaluations in Japan Expressways

Applicable to Mode/s:

All Road Traffic

Applicable to Freight:

Development stage:

Demonstrated

The proposed system use administrative pace-vehicles equipped with millimeter radio wave sensors and GPS technology to lead freeway traffic through heavily fogged areas subject to road closures.

W55 A New Night Visionary Pedestrian Detection and Warning Systems

Y. Fang, I. Masaki, and B.K.P. Horn - MIT Intelligent Transportation Research Center 2002

http://www-mtl.mit.edu/research/annual_reports/2002/01_ics/019_nenevpdws.pdf

Tech Type:

Goals Enabled

Tech Enablers: night vision system, infrared cameras,

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Instead of forcing drivers to look for extra information provided by infrared sensors, our systems will automatically project the information onto the windshield

W52 Enhanced AHS Safety Through the Integration of Vehicle Control and Communication

J.K. Hedrick, R. Sengupta, Q. Xu, Y. Kang, C. Lee - University of California, Berkeley 2003 UCB-ITS-PRR-2003-4

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2003/PRR-2003-04.pdf>

Tech Type:

Goals Enabled

Tech Enablers: ad hoc wire-less network based vehicle-vehicle (V-V) communicati

Assessment method/s: Simulation / Simulation, evaluation of scen

Applicable to Mode/s:

Applicable to Freight:

Development stage: Conceptualized

the authors focus on incorporating the vehicle-vehicle/roadside-vehicle (V-V/R-V) communication design and the adaptive cruise control/cooperative adaptive cruise control (ACC/CACC) system design.

W49 Ad-hoc Medium Access Control Protocol Design and Analysis for Vehicle Safety Communications

Raja Sengupta, Qing Xu, Tony Mak, Jeff Ko 2004

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2004/PRR-2004-34.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Ad-hoc medium access protocol, Advanced Vehicle Safety Syst

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Conceptualized

This paper studies the design of ad-hoc Medium Access Control (MAC) pro-tocols for a vehicle or the roadside to send safety messages to other vehicles.

W53 Control of Heavy-Duty Trucks: Environmental and Fuel Economy Considerations

Jianlong Zhang, Petros Ioannou

2004

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2004/PRR-2004-15.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Adaptive Cruise Control (ACC) systems

Assessment method/s: A new ACC design that is developed and

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

In this project we investigate the effect of heavy-duty trucks, equipped with different Adaptive Cruise Control (ACC) systems, on the environment and traffic flow characteristics.

W48 Integrated Roadway/Adaptive Cruise Control System: Safety, Performance, Environmental and Near Term Deployment Considerations

Jianlong Zhang, Petros Ioannou - University of Southern California

2004 UCB-ITS-PRR-2004-32

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2004/PRR-2004-32.pdf>

Tech Type:

Goals Enabled

Tech Enablers: Addaptive cruise control,

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Implemented

First ACC incorporates two controllers: one for speed tracking/one for vehicle following. Second ACC treats the vehicle following task as a special speed tracking task and incorporates more intelligence.

W45 Safety Performance and Robustness of Heavy Vehicle AVCS

R. Jemonde Taylor, Paul Yih, J. Christen Gerdes - Stanford University

2005 UCB-ITS-PRR-2005-15

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2005/PRR-2005-15.pdf>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Trucks

Applicable to Freight:

Development stage:

This research has had an impact on determining acceptable size and weight restrictions for heavy vehicles and on the actual design of heavy trucks for increased safety.

W60 HONDA ANNUAL REPORT: Safety and Environment

Honda

2006 Annual Report 2006

<http://world.honda.com/investors/annualreport/2006/08.html>

Tech Type:

Goals Enabled

Tech Enablers: motorcycle airbag, Advanced Safety Vehicle equipped to exchange

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Honda's summary of short term projects on safety

G89 SAFESPOT: Supporting smart vehicles on smart roads

ERTICO

2007

http://www.safespot-eu.org/pages/docs/D2.2.2_Part_B_Technology_Review_and_Survey.pdf

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Ideated

The project is on-going. One of the tasks involved a comprehensive technology review of sensor technologies. This document is available online.

Sub-category

Weather and Safety

W15 Road Weather Information System

John Manfredi, Thomas Walters, Gregory Wilke, Leon Osborne, Robert Hart, Tom Incr

2005

<http://ops.fhwa.dot.gov/publications/ess05/>

Tech Type:

Goals Enabled

Tech Enablers: Guidelines for location devices and weather information system

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

A Road Weather Information System (RWIS) consists of the hardware, software, and communications interfaces necessary to collect and transfer road weather observations from or near the roadway to a display device at the user's location

Sponsor: Federal Highway Administration

Sub-category

Work Zone Safety

W43 Global Warning Signal Integration as a Tool for Work Zone Safety and Efficiency

Theodore E. Cohn, Joseph E. Barton, Daniel S. Greenhouse, Kent B. Christianson - Uni

2006 California PATH Research Report

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2006/PRR-2006-03.pdf>

Tech Type:

Goals Enabled

Tech Enablers: wireless communication, WZ signals, asynchronous ignition, sync

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

We investigated ways to make the overall visual appearance of a WZ more compatible with the needs of passers-by. 1st part: psychophysical tests to assess the effect on lane keeping ability when WZ signals were ignited synchronously (cont on comments)

2nd part: investigated the feasibility of using wireless communication to coordinate light ignition times and to create coherence among the warning lights.

Category

Sub-category

L63 User Response to the Telephone Advisory Traveler Information System in the San Francisco Bay Area: Based on TravInfo Caller Survey Wave 1

Jean-Luc Ygnace, Ronald Koo, Youngbin Yim

2000

<http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2000/PWP-2000-08.pdf>

Tech Type: Information system

Goals Enabled Congestion Reduction and Management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

In this paper, the authors present the findings of a survey conducted among callers of the TravInfo telephone information service in the San Francisco Bay Area.

W62 Hybrid Technology and Collision Repair - Safety First!

Alexis Burt

2002 Press: AutoInc.com

<http://www.asashop.org/autoinc/april2002/collision.htm>

Tech Type: Hybrid car

Goals Enabled Environment (Emissions, Collision Repair, safety)

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

A test for the hybrid Toyota: Prius, emphasis in reduction of emissions and Disabling the High-Voltage System when the car crashes

| Perspective | Technology Driven | Category | Sub-category |
|---|---|--|--|
| G10 | Design, Field Implementation and Evaluation of Adaptive Ramp Metering Algorithms | | |
| Horowitz et al. | | | 2005 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper UCB-ITS-PRR-2005-2. |
| | http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1652&context=its/path | | |
| <i>Tech Type:</i> | Ramp Metering Algorithm | <i>Goals Enabled</i> | |
| <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| <i>Applicable to Mode/s:</i> | All Road Traffic | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Demonstrated |
| the design of improved freeway on-ramp metering strategies that make use of recent developments in traffic data collection, traffic simulation, and control theory | | | |
| 319 | Guidebook for Selecting Cost-Effective Wireless Communication | | |
| Yi-Chang Chiu, Haitham Logman, Mo-Ning Chiu, Analsoni Sunkara, and Carl Haas | | | 2005 |
| | http://www.utexas.edu/research/ctr/pdf_reports/0_4449_P1.pdf | | |
| <i>Tech Type:</i> | wireless communication | <i>Goals Enabled</i> | ITS |
| <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> |
| characterize available communication technology choices, facilitate the decision-making in choosing appropriate communication technology, a a web-based Knowledge Management System is developed. | | | |
| 320 | Driver Responses to Urban Freeway Information Loads | | |
| Alexei R. Tsyganov, Randy B. Machemehl, Ahmed Qatan, and Nick Warrenchuk | | | 2005 |
| | http://www.utexas.edu/research/ctr/pdf_reports/0_4621_2.pdf | | |
| <i>Tech Type:</i> | Information systems | <i>Goals Enabled</i> | |
| <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> |
| Relationships between information flow, driver stress, driver performance and accident experience have been hypothesized. Thresholds for minimum and maximum desirable numbers of traffic control signs per unit distance are developed | | | |

| Perspective | Technology Driven | Category | Sub-category |
|--------------------|---|---|--|
| 321 | Implementation Issues and Strategies for Deployment of Traveler Information Systems in Texas | | |
| | Khali Persad, C. Michael Walton, Zhong Wang | | 2006 |
| | http://www.utexas.edu/research/ctr/pdf_reports/0_5079_P3.pdf | | |
| | <i>Tech Type:</i> Traveler Information Systems | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> |
| | analysis of the benefits and costs of Advanced Traveler Information Systems (ATIS) deployment to enhance toll road operations in Texas, the implementation issues of ATIS, and funding opportunities for ATIS implementations. | | |
| 318 | Impacts of Traveler Information on Transportation Network Operations and Potential Deployment Technologies | | |
| | Khali Persad, C. Michael Walton, Zhong Wang | | 2006 |
| | http://www.utexas.edu/research/ctr/pdf_reports/0_5079_P2.pdf | | |
| | <i>Tech Type:</i> Traveler Information Systems | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> All Road Traffic | <i>Applicable to Freight:</i> <input checked="" type="checkbox"/> | <i>Development stage:</i> |
| | analysis of the impact of traveler information on commuters' route choices in the toll road context. a case study of the Austin, Texas metropolitan area are presented. Technologies for deploying traveler information systems are outlined. | | |
| G24 | Expediting Vehicle Infrastructure Integration (EVII) | | |
| | Xuanming Dong, Kang Li, Jim Misener, Pravin Varayia, Wenbing Zhang | | 2006 UCB-ITS-PRR-2006-20 |
| | http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2006/PRR-2006-20.pdf | | |
| | <i>Tech Type:</i> VII | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> All Road Traffic | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Demonstrated |
| | demonstrated two potential VII services, one in traffic data probes and another with safety, using real cars and on Caltrans roadways. | | |

| Perspective | Technology Driven | Category | Sub-category |
|-------------|--|---|--|
| 323 | Secure Crash Reporting in Vehicular Ad hoc Networks | | |
| | Sumair Ur Rahman and Urs Hengartner | | 2007 |
| | http://www.cacr.math.uwaterloo.ca/techreports/2007/cacr2007-11.pdf | | |
| | Tech Type: VANETS | Goals Enabled | Safety, Automatic Crash Report |
| | Tech Enablers: | | Assessment method/s: |
| | Applicable to Mode/s: | Applicable to Freight: <input type="checkbox"/> | Development stage: |
| | AutoCore, an automated crash reporting application that uses VANETs to provide authenticated digital video and telemetry data. This data is recorded by vehicles either involved in or at the scene of a crash and can be used by investigators. | | |
| 315 | Fuel economy improvements for urban driving: Hybrid vs. intelligent vehicles | | |
| | Chris Manzie, Harry Watson, Saman Halgamuge | | 2007 Transportation Research C |
| | Tech Type: Intelligent vehicles | Goals Enabled | Air quality improvement |
| | Tech Enablers: | | Assessment method/s: |
| | Applicable to Mode/s: Auto | Applicable to Freight: <input type="checkbox"/> | Development stage: Conceptualized |
| | telematics-enabled vehicles may use a relatively cheap sensor network to develop information about the traffic environment in which they are operating, and subsequently adjust their drive cycle | | |
| 316 | Electronic Vehicle Identification: Industry Standards, Performance, and Privacy Issues | | |
| | Khali Persad, C. Michael Walton, Shahriyar Hussain | | 2007 |
| | http://www.utexas.edu/research/ctr/pdf_reports/0_5217_P2.pdf | | |
| | Tech Type: Electronic vehicle identification | Goals Enabled | Congestion pricing |
| | Tech Enablers: | | Assessment method/s: |
| | Applicable to Mode/s: All Road Traffic | Applicable to Freight: <input checked="" type="checkbox"/> | Development stage: |
| | industry standards for dedicated short range communications (DSRC) are reviewed, followed by an evaluation of costs and performance. Privacy concerns regarding collection and use of data on vehicle movements are examined | | |

| Perspective | Technology Driven | Category | Sub-category |
|-------------|---|--|--|
| 317 | Toll Collection Technology and Best Practices | | |
| | Khali Persad, C. Michael Walton, Shahriyar Hussain | | 2007 |
| | http://www.utexas.edu/research/ctr/pdf_reports/0_5217_P1.pdf | | |
| | Tech Type: Toll collection | Goals Enabled congestion pricing, electronic tolls | |
| | Tech Enablers: | | Assessment method/s: |
| | Applicable to Mode/s: All Road Traffic | Applicable to Freight: <input checked="" type="checkbox"/> | Development stage: |
| | tolling practices and technologies are presented. Likely developments and enhancements are reviewed, along with potential tie-ins to other Intelligent Transportation Systems (ITS) | | |
| G91 | CyberCars - fully automated urban vehicles | | |
| | INRIA, France | | 2007 |
| | http://www-c.inria.fr/cybercars2 | | |
| | Tech Type: Autonomous Vehicle System | Goals Enabled Alternative transport, congestion reduction, safety | |
| | Tech Enablers: | | Assessment method/s: |
| | Applicable to Mode/s: | Applicable to Freight: <input type="checkbox"/> | Development stage: Conceptualized |
| | define conditions for the Cooperative CyberCars to become mutually compatible, complementary and interoperable on the roads. Develop Decision & Control Algorithms for Cooperative Driving Manoeuvres | | |

Category Air Quality Improvement and Envir

Sub-category

| | | | |
|-----|---|--|---------------------------------------|
| W63 | Zero-Emission Bus Demonstration Program FAQ | | |
| | VTA.org | | 2005 |
| | http://www.vta.org/projects/zebfaqs.html - 3 | | |
| | Tech Type: Hydrogen / Fuel cell | Goals Enabled | |
| | Tech Enablers: | | Assessment method/s: |
| | Applicable to Mode/s: | Applicable to Freight: <input type="checkbox"/> | Development stage: Implemented |
| | explaining benefits of the use of zero-emission buses in Santa Clara | | |

W23 BioEthanol for Sustainable Transport: Fuel for the future website

EU commission 2006

http://www.best-europe.org/upload/BEST_documents/info_documents/BEST_leaflet_for_web.pdf

Tech Type: Bioethanol

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

A website that summarizes European initiatives in Bioethanol

Category Electronic payment

Sub-category

G66 Fare Policies, Structures and Technologies: Update

MULTISYSTEMS, INC., MUNDLE & ASSOCIATES, INC., SIMON & SIMON RESEARC 2003 TCRP Report 94

http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_94.pdf

Tech Type: Electronic payment

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage:

Comprehensive review of relevant literature and research findings, Identification and description of emerging types of fare-related initiatives, Identification and description of emerging types of fare-related initiatives, Case studies

W3 TELEPAY Reports

ERTICO 2003

http://www.ertico.com/en/activities/activities/telepay_website.htm

Tech Type: Electronic payment systems

Goals Enabled Transist system improvements

Tech Enablers:

Assessment method/s: The system has been tested and validated

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Implemented

The project developed and assessed an innovative payment system for transport services (e.g. public transport ticketing, tolling for motorways, etc...) using portable phones using SMS and WAP technologies.

Implemented in some citites in Europe. This work is part of an iniciative of the European Commission for Transportation.

| Perspective | Technology Driven | Category | Electronic payment | <i>Sub-category</i> |
|--------------------|---|-----------------|--|---------------------------------------|
| G54 | Smart Card Primer | | | |
| | Charles Cagliostro | | | 2004 |
| | http://www.smartcardalliance.org/pages/smart-cards-intro-primer | | | |
| | <i>Tech Type:</i> smart card | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Implemented |
| | Describes the basics of smart card technology | | | |
| <hr/> | | | | |
| G57 | Fare Payment Technologies | | | |
| | Cutchin, Carli and Phyllis Orrick | | | 2004 ITS Decision Report |
| | http://calccit.org/itsdecision/serv_and_tech/Fare_Payment_Technologies/fare_payment_report.htm | | | |
| | <i>Tech Type:</i> Electronic fare payment | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> |
| | Primer on different fare payment technologies | | | |
| <hr/> | | | | |
| G25 | Institutional Issues and Arrangements in Interoperable Transit Smart Card Systems: A Review of the Literature on California, United States, and I | | | |
| | Allison C. Yoh, Hiroyuki Iseki, Brian D. Taylor, David A. King | | | 2006 UCB-ITS-PWP-2006-02 |
| | http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2006/PWP-2006-02.pdf | | | |
| | <i>Tech Type:</i> Smart Cards (electronic payment) | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> Transit | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> |
| | compares the results of interviews with transit agency leaders and smart card system project managers, and findings from the current research literature | | | |

G22 Survey on Status of Knowledge and Interest of Smartcard Fare Collection Systems among US Transit Agencies

Hiroyuki Iseki, Allison C. Yoh, Brian D. Taylor

2006 UCB-ITS-PRR-2006-12

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2006/PRR-2006-12.pdf>

Tech Type: Smart Cards (electronic payment)

Goals Enabled

Tech Enablers:

Assessment method/s: Survey of attitudes

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage:

Transit system managers are often uncertain about the costs and, particularly, the benefits of moving to smart cards; this is especially the case for the often complex interoperable smart cards systems.

G55 Transportation Application of Smart Cards

Smart Card Alliance

2007

<http://www.smartcardalliance.org/pages/smart-cards-applications-transportation>

Tech Type: Smart Cards

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Implemented

Describes various applications of smart cards in transportation industry.

G73 Transport for London's Oyster Card

Transport for London

2007

<http://www.tfl.gov.uk/tickets/oysteronline/2732.aspx>

Tech Type: Smart Card

Goals Enabled Transit system improvements

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Implemented

Oyster is a 'smartcard' which can store £90 of pay as you go credit plus your Travelcard or annual Bus Pass. It can be used on Tubes, buses, DLR, trams and some national rail services in London.

Category Human-Machine interface

Sub-category

W7 Enhanced human machine interface for on vehicle integrated driving support system

European Commission Competitive And Sustainable Growth Programme - Directorate 2003

<http://www.euclide-eu.org/>

Tech Type: Microwave radar sensor based syst to get **Goals Enabled** Safety and Security

Tech Enablers: **Assessment method/s:** Tested on simulators and on-road experim

Applicable to Mode/s: Auto **Applicable to Freight:** **Development stage:** Prototyped

System for driver support that fuses data of far infrared sensor/microwave radar and equipping it with an open/interoperable user interface, using visual, acoustic and tactile warning signals to attract driver's attention while min his distraction

able to distinguish obstacles from what is outside and above road, to identify type of obstacle, to give the driver an enhanced perception of the road ahead and to warn the driver of dangerous situations in an intuitive, effective and safe way

Category Information Management

Sub-category

G60 Advances in Traffic Data Collection and Management

Battelle 2003

http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE/doc/AdvancesTrafficData.doc

Tech Type: Data Collection **Goals Enabled**

Tech Enablers: **Assessment method/s:**

Applicable to Mode/s: **Applicable to Freight:** **Development stage:**

This white paper identifies innovative approaches including innovative contracting methods, standards, training for data collection, data sharing between agencies and states, and advanced traffic detection techniques.

L55 Statistical Methods and Safety Data Analysis and Evaluation

Washington, D.C.. : National Research Council 2004 Transportation Research Board (TRB), 2004. (TRR 1897)

Tech Type: Data analysis methods **Goals Enabled** Congestion Reduction and Management

Tech Enablers: **Assessment method/s:**

Applicable to Mode/s: **Applicable to Freight:** **Development stage:**

A collection of papers related to data analysis methods in transportation research

Transportation Research Board (TRB), 2004. (TRR 1897)

L30 Making the Most of Limited Data in the Evaluation of Advanced Traveler Information Services (ATIS) Through Experimental Resampling: Cincinnati
 Meenakshy Vasudevan Dr. Karl Wunderlich Alan Toppen James Larkin 2004

http://www.itsdocs.fhwa.dot.gov/JPODOCS/REPTS_TE//13989.html

Tech Type: Information system

Goals Enabled Congestion reduction and management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

This study is devoted to improving the accuracy of traffic decision making based on small dataset.

G19 Highway Traffic Data Sensitivity Analysis

Xiao-Yun Lu, Benjamin Coifman

2007 UCB-ITS-PRR-2007-03

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2007/PRR-2007-03.pdf>

Tech Type: ALGORITHMS

Goals Enabled

Tech Enablers:

Assessment method/s: examines the trade off in traffic control app

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Demonstrated

Part 1 describes a system approach used for highway traffic data sensitivity analysis. Part 2 examines the trade off in traffic control applications by calculating response time and traveler delay to spacing of sensors.

Category Intelligent Transportation Systems (

Sub-category

G4 Traffic Surveillance And Detection Technology Development: New Traffic Sensor Technology Final Report

Jitendra Malik and Stuart Russell

1997 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper UCB-ITS-PRR-97-6.

<http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1354&context=its/path>

Tech Type: Sensor Technology

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Implemented

The report discusses the following elements: tracking approach, motion-based grouping, tracking and grouping procedures, vehicle classification, hardware port, parameters computed at the TMC, testing methodology, and test results.

G3 Sensor Technologies and Data Requirements for ITS

Lawrence A. Klein

2001 Book

<http://www.amazon.com/exec/obidos/ASIN/158053077X>

Tech Type: Sensors

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

examines intrusive and non-intrusive traffic sensors and associated technologies that measure traffic flow and assist in the management of congestion.

L58 Intelligent Transportation Systems to Improve Elderly Persons' Mobility and Decision Making within Departure Time Choice Framework

Okola, Anna R. Walton, C. Michael

2003

<http://swutc.tamu.edu/publications/technicalreports/167531-1.pdf>

Tech Type: Information system

Goals Enabled Congestion Reduction and Management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

The study present the preliminary work on predicting benefits of Intelligent Transportation Systems for an aging cohort.

G38 Intelligent Transportation Technology Elements and Operational Methodologies for Shared-Use Vehicle Systems

Matthew Barth, Michael Todd, Susan Shaheen

2003 Transportation Research Record No. 1841 (2003), pp. 99-108.

<http://database.path.berkeley.edu/imr/papers/UCD-ITS-RP-04-15.pdf>

Tech Type: ITS

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Auto

Applicable to Freight:

Development stage:

Application of ITS to Shared Use vehicles (carsharing and station cars)

| Perspective | Technology Driven | Category | Intelligent Transportation Systems (ITS) | Sub-category |
|-------------|---|--|--|---|
| W57 | Brightness Adaptive TV Camera Chip | | | |
| | MIT Intelligent Transportation Research Center | | | 2003 |
| | http://www-mtl.mit.edu/researchgroups/itrc/old_website_2003_11/page7.html | | | |
| | Tech Type: Video | Goals Enabled | For monitoring traffic and detecting obstacles on hi | |
| | Tech Enablers: | | Assessment method/s: | |
| | Applicable to Mode/s: | Applicable to Freight: <input type="checkbox"/> | Development stage: | |
| | The goal of this project is to develop a TV camera which has enough intensity dynamic range for ITS applications. | | | |
| G14 | ITS Decision Enhancements: Developing Case-Based Reasoning and Expert Systems and Incorporating New Material | | | |
| | Joy Dahlgren, Asad Khattak, Patrick McDonough, Ipsita Banerjee, Phyllis Orrick, and A | | | 2004 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper UCB-ITS-PRR-2004-41. |
| | http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1643&context=its/path | | | |
| | Tech Type: ITS | Goals Enabled | | |
| | Tech Enablers: | | Assessment method/s: | |
| | Applicable to Mode/s: | Applicable to Freight: <input type="checkbox"/> | Development stage: | |
| | ITS Decision website has been developed for the user who is interested in learning about various Intelligent Transportation System (ITS) technologies. | | | |
| | obtain information relating to their particular context, http://www.calccit.org/itsdecision/ | | | |
| L59 | Recommendations and Implementation of Automatic Vehicle Identification for Incident Detection and Advanced Traveler information Systems | | | |
| | Mahmassani, H.S.; Rioux, T.; Haynes, M.; Khoury, J.; Logman, H.. | | | 2004 |
| | http://www.utexas.edu/research/ctr/pdf_reports/7_4957_S.pdf | | | |
| | Tech Type: Vehicle identification and information syste | Goals Enabled | Congestion Reduction and Management | |
| | Tech Enablers: | | Assessment method/s: | |
| | Applicable to Mode/s: | Applicable to Freight: <input type="checkbox"/> | Development stage: | |
| | This research studied two Automatic Vehicle Identification (AVI) algorithms and two Inductive loop detector (ILD) algorithms. | | | |

| Perspective | Technology Driven | Category | Intelligent Transportation Systems (ITS) | Sub-category |
|--------------------|---|-----------------|--|---|
| G15 | Vehicle Detection by Sensor Network Nodes | | | |
| | Jiagen Ding, Sing-Yiu Cheung, Chin-woo Tan, and Pravin Varaiya | | | 2004 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper UCB-ITS-PRR-2004-39. |
| | http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1641&context=its/path | | | |
| | Tech Type: Sensor | | Goals Enabled | |
| | Tech Enablers: | | | Assessment method/s: |
| | Applicable to Mode/s: All Road Traffic | | Applicable to Freight: <input type="checkbox"/> | Development stage: Conceptualized |
| | algorithm development and experimental work of the sensor node signal processing for vehicle detection. | | | |
| G32 | Initial Scoping of Bay Area Smart Mobility Corridors and ITS World Congress | | | |
| | Susan Shaheen, Rachel S. Finson, Cynthia McCormick | | | 2004 UCB-ITS-PWP-2004-09 |
| | http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2004/PWP-2004-09.pdf | | | |
| | Tech Type: ITS | | Goals Enabled | |
| | Tech Enablers: | | | Assessment method/s: |
| | Applicable to Mode/s: | | Applicable to Freight: <input type="checkbox"/> | Development stage: Ideated |
| | The Innovative Corridors Initiative (ICI) is a multi-year project designed to encourage the early deployment of innovative technologies for Intelligent Transportation Systems (ITS) in California. | | | |
| G16 | Development and Field Testing of Laser Photodiode Array-Based Vehicle Detection Systems | | | |
| | Harry H. Cheng, Ben Shaw, Joe Palen, Zhaoqing Wang, Ping Feng, Stephen Nestinger | | | 2004 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper UCB-ITS-PRR-2004-38. |
| | http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1640&context=its/path | | | |
| | Tech Type: Sensor | | Goals Enabled | |
| | Tech Enablers: | | | Assessment method/s: |
| | Applicable to Mode/s: | | Applicable to Freight: <input type="checkbox"/> | Development stage: |
| | develop a roadway detection system that can be used to gather reliable travel time data non-intrusively. | | | |

G30 Magnetometer/GPS/INS Demo 2002 Support and Mitigation of GPS Signal Blockage Research

Jay Farrell

2004 UCB-ITS-PRR-2004-17

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2004/PRR-2004-17.pdf>

Tech Type: Sensors, Automatic Navigation

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Demonstrated

This project is concerned with accurately and reliably determining the state of a vehicle relative to a specified trajectory (e.g., a lane centerline)

G58 Fast Lane: Agencies expand use of the electronic toll collection and explore new connections

Philipson, Fred

2004 Government Technology magazine

<http://www.govtech.net/magazine/story.php?id=91366>

Tech Type: RFID tags

Goals Enabled

Tech Enablers: electronic toll collection

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Implemented

Describes spread of Radio Frequency Identification tags to toll collecting

L31 Statewide/Rural Intelligent Transportation Systems (ITS) : 2002 Summary Report

2004

http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE/14008.htm

Tech Type: ITS, Traveler Information System

Goals Enabled Congestion Reduction and Management

Tech Enablers: Information surveillance, communication, and storage systems

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

This document reports on the results of a statewide survey aimed at gathering data on the deployment of Intelligent Transportation Systems (ITS) in rural and non-urban areas.

| Perspective | Technology Driven | Category | Intelligent Transportation Systems (ITS) | <i>Sub-category</i> |
|--------------------|---|-----------------|--|--|
| G8 | Field Investigation of Advanced Vehicle Reidentification Techniques and Detector Technologies - Phase 2 | | | |
| | Ritchie et al. | | | 2005 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper prr-2005-8. |
| | http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1665&context=its/path | | | |
| | <i>Tech Type:</i> Vehicle reidentification | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> All Road Traffic | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Demonstrated |
| | study traffic sensor and detector technologies for vehicle reidentification (REID) purposes | | | |
| G29 | Preparing the Way for Vehicle-Infrastructure Integration | | | |
| | Steven E. Shladover | | | 2005 UCB-ITS-PRR-2005-31 |
| | http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2005/PRR-2005-31.pdf | | | |
| | <i>Tech Type:</i> VII, Vehicle Infrastructure Integration | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Conceptualized |
| | This report identifies some key research issues that need to be investigated in support of VII, in order to ensure that the VII concept and designs are as efficient and effective | | | |
| L61 | A Multi-channel VANET Providing Concurrent Safety and Commercial Services | | | |
| | Tony K. Mak, Kenneth P. Laberteaux, Raja Sengupta | | | 2005 |
| | http://database.path.berkeley.edu/reports/index.cgi?reqtype=displayrecord&record=694 | | | |
| | <i>Tech Type:</i> Information communication system | | <i>Goals Enabled</i> Safety | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> |
| | This paper proposes a multi-channel wireless communication architecture and protocol for the scenario where commercial services are provided by roadside infrastructure. This solution extends the IEEE 802.11 wireless LAN protocol. | | | |

| Perspective | Technology Driven | Category | Intelligent Transportation Systems (ITS) | Sub-category |
|--------------------|---|---|--|--|
| L54 | Intelligent Transportation Systems and Vehicle-Highway Automation 2005 | Washington, D.C.. : National Research Council | | 2005 Transportation Research Board (TRB), 2005. (TRR 1910) |
| | <i>Tech Type:</i> Information system | | <i>Goals Enabled</i> Congestion Reduction and Management | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> |
| | A collection of papers related to Data and Information Technology, Operations. | | | |
| | Transportation Research Board (TRB), 2005. (TRR 1910) | | | |
| G83 | Dynasty: European demonstration of ITS applications in China | | | 2005 |
| | ERTICO | | | |
| | http://www.ertico.com/en/subprojects/dynasty/home/home.htm | | | |
| | <i>Tech Type:</i> ITS | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Conceptualized |
| | demonstrating a platform for DYNAmic Traffic information Services for the city of Beijing, demonstrate the use of European developed Information and Communication Technology (ICT) for the transport sector in China | | | |
| G85 | Hybridisation of GNSS and cellular positioning for location-based services | | | 2005 |
| | ERTICO | | | |
| | http://www.ertico.com/download/publications/emily_0505.pdf | | | |
| | <i>Tech Type:</i> Vehicle location | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> |
| | hybridising satellite and cellular positioning in order to provide a flexible and, when needed, high-performance positioning technology for location-based services. A combined solution will help solve the satellite availability problem | | | |

| Perspective | Technology Driven | Category | Intelligent Transportation Systems (ITS) | <i>Sub-category</i> |
|--------------------|--|-----------------|--|---|
| G5 | Demonstration of Automated Heavy-Duty Vehicles | | | |
| | Shladover et al. | | | 2006 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper UCB-ITS-2005-23. |
| | http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1680&context=its/path | | | |
| | <i>Tech Type:</i> Automated Vehicle | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Demonstrated |
| | This project was created in order to continue progress toward a future in which vehicle automation technologies are able to improve transportation operations. | | | |
| G23 | Commercially-off-the-Shelf (COTS) and Emerging Technologies | | | |
| | Ashkan Sharafsaleh | | | 2006 UCB-ITS-PRR-2006-15 |
| | http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2006/PRR-2006-15.pdf | | | |
| | <i>Tech Type:</i> Sensor Technology | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> All Road Traffic | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> |
| | This survey covered devices from a variety of different detection technologies: microwave, passive infrared, video image processing, active magnetic, passive magnetic, passive acoustic, active laser, and inductive. | | | |
| G78 | Travel time estimation using cell phones (TTECP) for highways and roadways | | | |
| | S. Wunnava, K. Yen, T. Babij, R. Zavaleta, R. Romero, C. Archilla | | | 2007 |
| | http://www.dot.state.fl.us/research-center/Completed_Proj/Summary_TE/FDOT_BD015_12_rpt.pdf | | | |
| | <i>Tech Type:</i> Cell phone probe | | <i>Goals Enabled</i> Travel time estimation | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Demonstrated |
| | Cell phone technology is viable under free-flow conditions; not accurate under congested traffic conditions. | | | |

| Perspective | Technology Driven | Category | Intelligent Transportation Systems (ITS) | Sub-category |
|---------------------|--|-----------------|--|---|
| G18 | Traffic Surveillance by Wireless Sensor Networks | | | |
| | Sing-Yiu Cheung, Pravin Varaiya | | | 2007 |
| | http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2007/PRR-2007-04.pdf | | | |
| | Tech Type: Sensor, Communication | | Goals Enabled | |
| | Tech Enablers: | | | Assessment method/s: |
| | Applicable to Mode/s: All Road Traffic | | Applicable to Freight: <input type="checkbox"/> | Development stage: Demonstrated |
| | summarizes a three-year research project in the prototype design, analysis and performance of wireless sensor networks for traffic surveillance, using both acoustic and magnetic sensors. Magnetic sensors turned out to be superior. | | | |
| L45 | State Space Neural Networks for Travel Time Predictions in Signalized Networks | | | |
| | Singh, Ajay Kumar ; Abu-Lebdeh, Ghassan | | | 2007 Transportation Research Board 86th Annual Meeting |
| | Transportation Research Board Business Office | | | |
| | Tech Type: Algorithm | | Goals Enabled Congestion Reduction and Management | |
| | Tech Enablers: | | | Assessment method/s: |
| | Applicable to Mode/s: | | Applicable to Freight: <input type="checkbox"/> | Development stage: |
| | a State-Space Neural Network models is proposed to develop a short time prediction model which works efficiently in both congested and non-congested conditions. | | | |
| | The above given link is used to order the document. | | | |
| Sub-category | <i>Machine vision</i> | | | |
| W56 | A Binocular Vision System for Automated Vehicle | | | |
| | M.J. Kais (M. Parent and I. Masaki) | | | 2002 INRIA and Intelligent Transportation Research Center |
| | http://www-mtl.mit.edu/research/annual_reports/2002/01_ics/020_bivisyauve.pdf | | | |
| | Tech Type: Machine vision | | Goals Enabled Safety and Security | |
| | Tech Enablers: the automated vehicle, binocular vision | | | Assessment method/s: |
| | Applicable to Mode/s: Auto | | Applicable to Freight: <input type="checkbox"/> | Development stage: |
| | it is possible to get a map of the distance between each object in the image and the vision system, This system is being developed to perform three key functions for an automated vehicle: lane marker detection, obstacle detection | | | |
| | a new concept of mobility: the automobile is part of the public transportation system and is used as a complement to | | | |

W54 Vision Systems for Intelligent Vehicles: Intelligent Cruise Control, Obstacle Det: and Reliable Lane Sensing

MIT Intelligent Transportation Research Center

2003

http://www-mtl.mit.edu/researchgroups/itrc/old_website_2003_11/page19.html

Tech Type: Machine vision

Goals Enabled Safety and Security

Tech Enablers: single versatile vision system, a three-dimensional vision system, O **Assessment method/s:**

Applicable to Mode/s: **Applicable to Freight:** **Development stage:** Demonstrated

an integrated a system architecture which carries out various intelligent vehicle functions with a single versatile vision system

W8 Methods for Machine Vision Based

Matti Kutila

2006

<http://www.vtt.fi/inf/pdf/publications/2006/P621.pdf>

Tech Type: Machine vision

Goals Enabled Safety and Security

Tech Enablers: **Assessment method/s:**

Applicable to Mode/s: Auto **Applicable to Freight:** **Development stage:**

Doctoral thesis that investigate the feasibility of techniques and methods, previously examined within the industry, for monitoring the driver momentary distraction state and level of vigilance during a driving task.

The study provides a multidisciplinary review of state-of-art monitoring appl for adapting them to an in-vehicle env

Category Safety

Sub-category

G88 SpeedAlert: In-vehicle speed limit information and warning system

ERTICO

2005

http://www.webhouse.dk/speedalert/acrobat/SA_V10_DEL_Final%20Report_141005.pdf

Tech Type: Speed detection and warning system

Goals Enabled

Tech Enablers: **Assessment method/s:**

Applicable to Mode/s: All Road Traffic **Applicable to Freight:** **Development stage:** Demonstrated

The overall objective of the SpeedAlert initiative was to support the implementation of invehicle speed alert applications that can contribute to improve road safety.

W17 USE OF SPEED AND RED-LIGHT CAMERAS FOR TRAFFIC ENFORCEMENT: GUIDANCE ON DEPLOYMENT, VISIBILITY AND SIGNING

Department for Transport, UK

2007

<http://www.dft.gov.uk/pgr/roadsafety/speedmanagement/pdfdfcirc0107>

Tech Type: Red Light Cameras

Goals Enabled Provide a valuable and cost-effective method of pr

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This Circular provides guidance and best practice advice on the deployment of speed and red-light cameras

More reports about safety cameras can be found at:
<http://www.dft.gov.uk/safetycameras>

Category Security

Sub-category

G46 Biometrics at the Frontiers: Assessing the Impact on Society

European Commission Joint Research Centre Institute for Prospective Technological S

2005

http://ec.europa.eu/justice_home/doc_centre/freetravel/doc/biometrics_eur21585_en.pdf

Tech Type: Biometric identification

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

The study highlights a number of key issues to be taken into account when considering the large-scale implementation of biometric technologies.

Category Transit system improvement

Sub-category

G68 Effectiveness of Bus Signal Priority: Final Report

Chada, Shireen and Newland, Robert

<http://www.nctr.usf.edu/pdf/BSP%20Final%20Report.pdf>

2002 National Center for Transit Research: Center for Urban Transportation Research(College of Engineering. University of South Florida)

Tech Type: Transit Signal Priority

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage: Demonstrated

A set of "Operational and Design Guidelines" for BSP were developed to assist an agency in choosing the most appropriate BSP method that complements the area characteristics. Five agencies utilizing BSP around the country were studied.

L34 Strategies for Improved Traveler Informatin

http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_92.pdf

2003 TRANSIT COOPERATIVE RESEARCH PROGRAM report 92

Tech Type: Information system

Goals Enabled Congestion reduction and management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This report summarizes the sate of the practise in the field of improved transit traveler information.

L24 Transit Information and Promotion: Traveler Response to Transportation Systems Changes, TCRP Report 95, Chapter 11 (Washington, DC).

http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c11.pdf

2003 Transportation Research Board

Tech Type: Information system

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Examines travelers' responses to mass-marketed and targeted information and promotions, customer information services, and real-time transit information dissemination.

L67 Traveler Response to Innovative Personalized Demand-Responsive Transit in the San Francisco Bay Area

Asad J. Khattak, Youngbin Yim

2003

<http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2003/PWP-2003-05.pdf>

Tech Type: Information system

Goals Enabled Congestion Reduction and Management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

In this paper, the authors explore the demand for a consumer-oriented Personalized Demand Responsive Transit (PDRT) service in the San Francisco Bay Area.

G37 Unsafe at Any Speed?: What the Literature Says about Low-Speed Modes

Caroline Rodier, Susan Shaheen, Stephanie Chung

2004 Transportation Research Board (TRB), 2004

<http://database.path.berkeley.edu/imr/papers/UCD-ITS-RR-03-10.pdf>

Tech Type: Low-speed mode

Goals Enabled Better access to transit, safety

Tech Enablers:

Assessment method/s: Literature review

Applicable to Mode/s: Other

Applicable to Freight:

Development stage:

First, the risk of being injured while using a low-speed mode is relatively small. Second, most low-speed mode crashes do not involve collisions with other low-speed modes or motor vehicles (63 to 80 percent).

G6 SmartBRT: A Tool for Simulating, Visualizing, and Evaluating Bus Rapid Transit Systems

Joel VanderWerf

2005 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper UCB-ITS-PRR-2005-26.

<http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1679&context=its/path>

Tech Type: Software

Goals Enabled Congestion Management, Transit System, BRT ev

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Bus Transit

Applicable to Freight:

Development stage:

Designed for modeling and simulating hypothetical transit systems, especially Bus Rapid Transit (BRT) technologies and policies. SmartBRT can be used to evaluate new technologies and policies that haven't been fully explored.

G28 Advanced Bus Stops for Bus Rapid Transit

Joy Dahlgren, Betsy Morris

2005 UCB-ITS-PRR-2005-06

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2005/PRR-2005-06.pdf>

Tech Type: Information, Lighting, electronic payment **Goals Enabled** Transit oriented development

Tech Enablers: **Assessment method/s:** Attitudes survey, economic feasibility

Applicable to Mode/s: **Applicable to Freight:** **Development stage:**

Among the most promising are real-time arrival time signs, electronic fare payment, and various solar powered lights, signs, and beacons.

G27 EasyConnect: Low-Speed Modes Linked to Transit Planning Project

Susan A. Shaheen, Caroline J. Rodier

2006 UCB-ITS-PWP-2006-07

<http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2006/PWP-2006-07.pdf>

Tech Type: Low-speed modes **Goals Enabled** Transit oriented development

Tech Enablers: **Assessment method/s:**

Applicable to Mode/s: Access mode **Applicable to Freight:** **Development stage:** Demonstrated

The project components include the introduction of shared-use low speed mode vehicles and electronic lockers at the proposed TOD.

The EasyConnect field test includes a fleet of shared-use electric bicycles, non-motorized bicycles, Segway Human Transporters

G71 Countdown

Transport for London

2007

<http://www.tfl.gov.uk/corporate/projectsandschemes/technologyandequipment/2369.aspx>

Tech Type: Information system for buses **Goals Enabled** Transit system improvement

Tech Enablers: **Assessment method/s:**

Applicable to Mode/s: Transit **Applicable to Freight:** **Development stage:** Implemented

Countdown is an electronic information display system that gives people waiting at bus stops real-time information on bus arrival times.

In future, the Countdown signs will provide information in both audio and visual format. It will incorporate GPRS data (mobile phone technology), GPS location (satellite based) and WiLAN (short-range, high-speed data).

| Perspective | Technology Driven | Category | Transit system improvement | <i>Sub-category</i> |
|--------------------|---|--|-----------------------------|--|
| G1 | Viability of Personal Rapid Transit In New Jersey | | | |
| | Carnegie and Hoffman | | | 2007 |
| | http://faculty.washington.edu/jbs/itrans/big/PRTfinalreport.pdf | | | |
| | <i>Tech Type:</i> Personal Rapid Transit | <i>Goals Enabled</i> | Congestion Reduction | |
| | <i>Tech Enablers:</i> | | <i>Assessment method/s:</i> | comparison with different modes: trip time |
| | <i>Applicable to Mode/s:</i> | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> | Demonstrated |
| | The report summarizes the history of PRT development efforts worldwide. PRT systems are approaching but not yet ready for public deployment. | | | |
| G63 | Real-time Transit Information on London Underground Metro System | | | |
| | | | | 2007 |
| | http://www.tfl.gov.uk/tfl/livetravelnews/realtime/tube/default.html | | | |
| | <i>Tech Type:</i> Transit information system | <i>Goals Enabled</i> | | |
| | <i>Tech Enablers:</i> | | <i>Assessment method/s:</i> | |
| | <i>Applicable to Mode/s:</i> Transit | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> | Implemented |
| | The website provides real-time information about service status on the different lines of the London Underground | | | |
| G72 | Transport for London's iBus | | | |
| | Transport for London | | | 2007 |
| | http://www.tfl.gov.uk/corporate/projectsandschemes/technologyandequipment/2373.aspx | | | |
| | <i>Tech Type:</i> Transit information and communication sy | <i>Goals Enabled</i> | Transit system improvement | |
| | <i>Tech Enablers:</i> | | <i>Assessment method/s:</i> | |
| | <i>Applicable to Mode/s:</i> Transit | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> | Demonstrated |
| | State-of-the-art Automatic Vehicle Location technology system and telecommunications in buses across London. Key benefits include: more reliable services, precise real-time information, improved information at bus stops, better emergency response. | | | |
| | Detailed design of the solution is already underway. Buses will be equipped with the new systems over the next four years with the first full garage installation expected to be completed in 2007. | | | |

Category Transit system improvements

Sub-category

G12 High Coverage Point to Point Transit (HCPPT): A New Design Concept and Simulation - Evaluation of Operational Schemes

R. Jayakrishnan, Cristian E. Cortes, Laia Pages, Riju Lavanya, and Amelia C. Regan

2004 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper prr-2005-18.

Tech Type: Algorithm

Goals Enabled Congestion reduction

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Bus Transit

Applicable to Freight:

Development stage: Conceptualized

the proposed scheme design, the development of sophisticated routing rules, and the implementation of a multi-purpose simulation platform

G11 Framework for Bus Rapid Transit Development and Deployment Planning

Mark A. Miller, Yafeng Yin, Tunde Balvanyos, and Avishai Ceder

2004 California Partners for Advanced Transit and Highways (PATH). Research Reports: Paper UCB-ITS-PRR-2004-47.

<http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1649&context=its/path>

Tech Type: Bus Rapid Transit

Goals Enabled Congestion Management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Bus Transit

Applicable to Freight:

Development stage: Conceptualized

a macro-scale examination of bus rapid transit systems from technical, operational, institutional, and planning perspectives.

G92 EDICT: Evaluation and demonstration of innovative city transport

EUROPEAN COMMISSION DG RESEARCH

2005

<http://archive.cardiff.gov.uk/traffic/internet/jondutton/edict/current/CONTENT/Del10%20-%20Final%2>

Tech Type:

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Transit

Applicable to Freight:

Development stage: Demonstrated

Full scale demonstration of a PRT system (ULTRA). Detailed analysis with respect to cost-benefit assessment, Transport Efficiency and Quality, Safety and Security, Accessibility, Environment

Category Traveler Information System

Sub-category

L18 Advanced Traveler Information Systems And Commerical Vehicle Operations Components of The Intelligent Transportation Systems: Head-up Di
 B. L. Hooey & B. F. Gore, Battelle Human Factors Transportation Center 1998

<http://www.fhwa.dot.gov/tfhrc/safety/pubs/96153/96153.html>

Tech Type: Information system

Goals Enabled Congestion reduction and management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Other

Applicable to Freight:

Development stage: Demonstrated

Examine the driving performance implications of an automotive HUD when used to present simple route guidance information.

L19 Advanced Traveler Information Systems and Commercial Vehicle Operations: Components of the Intelligent Transportation Systems: On-Road Ev
 B.H. Kantowitz, B.L. Hooey, & O. Simsek, Battelle Human Factors Transportation Cent 1998

<http://www.fhwa.dot.gov/tfhrc/safety/pubs/99132/99132.html>

Tech Type: Information system

Goals Enabled Safety

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Other

Applicable to Freight:

Development stage: Demonstrated

Develop ATIS design guidelines for In-Vehicle Signing Information Systems (ISIS) and In-Vehicle Safety Advisory and Warning Systems (IVSAWS)

L25 Users of a regional telephone-based traveler information system – a study of TravInfo™ users in the San Francisco Bay
 Shomik Mehndiratta, Michael Kemp , Sean Pierce and Jane Lappin 2000 Transportation

<http://www.springerlink.com/content/u85262133w6u1331/>

Tech Type: Information system

Goals Enabled Congestion reduction and management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

The research produced some estimates of the average monetary values that the sample of current users will pay for the information improvements.

L43 Traveller Information Systems Research: A Review and Recommendations for Transport Direct

Glenn Lyons, Reg Harman, John Austin and Alastair Duff

2001

<http://www.dft.gov.uk/pgi/inclusion/mef/areviewofexistingresearchofr3253>

Tech Type: information system

Goals Enabled Congestion Reduction and Management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

a review of existing research on travel information and retailing (where retailing refers to booking of, and payment for, travel) relating to its Transport Direct Programme and to assemble a database of completed, ongoing and planned research work.

L62 Data Sharing of Traveler Information With the Public and Private Sectors: State of the Practice

Mark A. Miller, Kevin Balke

2001

<http://www.path.berkeley.edu/PATH/Publications/PDF/PRR/2001/PRR-2001-16.pdf>

Tech Type: Information communication system

Goals Enabled Congestion Reduction and Management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This report presents the results of its examination of the current state of the practice of traveler information data sharing with the public and private sectors.

L42 Emergence of private advanced traveler information service providers and its effect on traffic network performance

University of California, Irvine. Institute of Transportation Studies

2001

<http://www.dcddata.com/path/path.htm>

Tech Type: ATIS

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

Examines the emergence of supply side competition in the advanced traveler information service (ATIS) industry and the marketability of private ATIS.

| Perspective | Technology Driven | Category | Traveler Information System | Sub-category |
|-------------|---|--|--|--------------|
| L40 | Traveler Information | | | |
| | Orrick, Phyllis | | | 2002 |
| | http://www.calccit.org/itsdecision/serv_and_tech/Traveler information/trav info overview.html | | | |
| | <i>Tech Type:</i> Information surveillance and informatioin s | <i>Goals Enabled</i> | Congestion reduction and management | |
| | <i>Tech Enablers:</i> | | <i>Assessment method/s:</i> | |
| | <i>Applicable to Mode/s:</i> | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> | |
| | This reprot review static and real-time traveler information, the use value to drivers and the impacts of traveler information on driver behavior. | | | |
| G82 | Diamond: Multimedia ITS applications through DAB | | | |
| | Uwe Feindt, ERTICO | | | 2002 |
| | http://www.ertico.com/download/diamond_documents/2_1d003f01.pdf | | | |
| | <i>Tech Type:</i> Communication architecture | <i>Goals Enabled</i> | Information systems | |
| | <i>Tech Enablers:</i> | | <i>Assessment method/s:</i> | |
| | <i>Applicable to Mode/s:</i> | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Demonstrated | |
| | The major objective of DIAMOND is to establish the technical and commercial feasibility of DAB based ITS services. | | | |
| | http://www.ertico.com/en/activities/activities/diamond_website.htm | | | |
| L66 | Investigation of Traveler Information and Related Travel Behavior in the San Francisco Bay Area | | | |
| | Asad J. Khattak, Felipe Targa, Youngbin Yim | | | 2003 |
| | http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2003/PWP-2003-06.pdf | | | |
| | <i>Tech Type:</i> Information system | <i>Goals Enabled</i> | Congestion Reduction and Management | |
| | <i>Tech Enablers:</i> | | <i>Assessment method/s:</i> | |
| | <i>Applicable to Mode/s:</i> | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> | |
| | In this paper, the authors present the results of traveler response to Advanced Traveler Information Systems (ATIS) using several surveys conducted for the TravInfo evaluation study. | | | |

| Perspective | Technology Driven | Category | Traveler Information System | Sub-category |
|--------------------|--|-----------------|--|---------------------------------------|
| G62 | Traveler Information Systems in Europe | | | 2003 |
| | Office of International Programs FHWA/US DOT | | | |
| | http://international.fhwa.dot.gov/travelinfo/traveler_information.pdf | | | |
| | <i>Tech Type:</i> ATIS | | <i>Goals Enabled</i> | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> |
| | This report presents the findings of the study team that participated in an International Technology Scanning Program tour to the countries of Spain, Germany, Sweden, Scotland, and England. | | | |
| L35 | Traveler Information Systems in Europe | | | 2003 |
| | Office of International Programs FHWA/US DOT | | | |
| | http://international.fhwa.dot.gov/travelinfo/traveler_information.pdf | | | |
| | <i>Tech Type:</i> Communication and information system | | <i>Goals Enabled</i> Congestion reduction and management | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Implemented |
| | This project examines European practices to be applied for implementing "511" telephone traveler information services in the United States. In addition, the fundings made specific recommendations for ATIS applications in the United States | | | |
| L33 | Traffic Management Data Dictionary and Message Sets for External Traffic Management Center Communication | | | 2003 |
| | http://www.ite.org/tmdd/TMDDV3.0-ConOps-draftv3-0.doc | | | |
| | <i>Tech Type:</i> Information system | | <i>Goals Enabled</i> Congestion reduction and management | |
| | <i>Tech Enablers:</i> | | | <i>Assessment method/s:</i> |
| | <i>Applicable to Mode/s:</i> | | <i>Applicable to Freight:</i> <input type="checkbox"/> | <i>Development stage:</i> Implemented |
| | This report serves as a guide to develop external traffic management center communications. | | | |

L38 An Assessment of the Potential of ATIS to Reduce Travel Disutility in the Washington DC Region

Shah, Vaishali; Karl Wunderlich; Alan Toppen; and James Larkin 2003

<http://www.benefitcost.its.dot.gov/ITS/benecost.nsf/5c36f979ce2c926a852569bc006c5713/42b2c5f6>

Tech Type: Information system *Goals Enabled* Congestion reduction and management

Tech Enablers: *Assessment method/s:*

Applicable to Mode/s: *Applicable to Freight:* *Development stage:*

Demonstrate the benefit of the travel time and on-time reliability of ATIS users.

L37 The Impact of Real-Time Predictive Traffic Information on Travelers' Behavior in the I-4 Corridor

The impact of I-4 Traffic Information Project Research Team 2003

http://www.dot.state.fl.us/research-center/Completed_Proj/Summary_TE/FDOT_BC355_03_rpt.pdf

Tech Type: Information system *Goals Enabled* Congestion reduction and management

Tech Enablers: *Assessment method/s:*

Applicable to Mode/s: *Applicable to Freight:* *Development stage:*

The contributions of this project assist the implementation of advanced traveler information systems

L29 The Evaluation of Advanced Traveler Information Services (ATIS) Impacts on Truck Travel Time Reliability Using the Simulated Yoked Study Con

Dr. Soojung Jung, Dr. Karl Wunderlich, Alan Toppen 2004

http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE//13988.html

Tech Type: Information system *Goals Enabled* Congestion reduction and management

Tech Enablers: *Assessment method/s:*

Applicable to Mode/s: *Applicable to Freight:* *Development stage:* Implemented

The evaluation results show ATIS is a useful service for the truck movements with stringent on-time requirements but facing considerable variability in their trip travel times.

L20 Short-Term Arterial Travel Time Prediction for Advanced Traveler Information Systems

WeiHua Lin, Amit Kulkarni, and Pitu Mirchandani

2004 Intelligent Transportation Systems,8

<http://www.sie.arizona.edu/ATLAS/docs/Lin%20et%20al-2004.pdf>

Tech Type: Develop a simple model for arterial travel ti **Goals Enabled** Predict travel time with a reasonable degree of acc

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Auto

Applicable to Freight:

Development stage: Conceptualized

Predict travel time with a reasonable degree of accuracy under various traffic conditions and signal coordination levels.

L65 Traveler Response To New Dynamic Information Sources: Analyzing Corridor And Area-Wide Behavioral Surveys

Youngbin Yim, Asad J. Khattak, Jeremy Raw

2004

<http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2004/PWP-2004-04.pdf>

Tech Type: Information system

Goals Enabled Congestion Reduction and Management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

This report describes a comprehensive conceptual model that is based on information processing and traveler response, and which accounts for the effect of information source, content and quality on information access and travel behavior.

L56 Driver and Vehicle Simulation, Human Performance, and Information Systems for Highways; Railroad Safety; and Visualization in Transportation

Washington, D.C.. : National Research Council

2004 Transportation Research Board (TRB), 2004.
(TRR 1899)

Tech Type: Information system

Goals Enabled Congestion Reduction and Management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage:

A collection of papers related to Driver and Vehicle Simulation, Human Performance, and Information Systems for Highways; Railroad Safety; and Visualization in Transportation.

Transportation Research Board (TRB), 2004. (TRR 1899)

G31 Traveler Response To New Dynamic Information Sources: Analyzing Corridor And Area-Wide Behavioral Surveys

Youngbin Yim, Asad J. Khattak, Jeremy Raw

2004 UCB-ITS-PWP-2004-04

<http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2004/PWP-2004-04.pdf>

Tech Type: Information Systems, Travel Behavior **Goals Enabled**

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: All Road Traffic

Applicable to Freight:

Development stage: Conceptualized

This report describes a comprehensive conceptual model that is based on information processing and traveler response, and which accounts for the effect of information source, content and quality on information access and travel behavior.

The report discusses issues related access to new and conventional technologies and services, their current market penetration levels, switching behavior regarding new information sources

G81 Incremental Map Updates for Advanced In-Vehicle Applications

ERTICO (coordinator), BMW, CRF Fiat Research Centre, DaimlerChrysler, Navigon, N

2004

http://www.ertico.com/download/publications/actmap_1003.pdf

Tech Type: Software **Goals Enabled** Advanced Traveler Information Systems

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

develop a standard solution for incremental updates of in-vehicle map databases to enable advanced navigation and advanced driver assistance systems (ADAS).

G87 PRETIO: Multimedia ITS services over hybrid communication systems

ERTICO

2004

http://www.ertico.com/en/activities/activities/pretio_website.htm

Tech Type: Communication system, information syste **Goals Enabled**

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Demonstrated

test a set of multimedia services to validate the associated proposed business plans and ultimately develop an economically viable business case for multimedia ITS services over hybrid communications systems

| Perspective | Technology Driven | Category | Traveler Information System | Sub-category |
|-------------|---|---|-------------------------------------|--|
| L21 | Driver Performance While Interacting With The 511 Travel Information System in Urban and Rural Traffic | | | |
| | Laura M. Stanley, Michael J. Kelly, Suzanne Lassacher | | | 2005 PROCEEDINGS of the Third International Driving Symposium on Human Factors in Driver Assessment. Training and Vehicle Design |
| | http://ppc.uiowa.edu/driving-assessment/2005/final/papers/71_Stanley_Kellyformat.pdf | | | |
| | Tech Type: Information system | Goals Enabled | Congestion reduction and management | |
| | Tech Enablers: | | Assessment method/s: | Statistics |
| | Applicable to Mode/s: Other | Applicable to Freight: <input type="checkbox"/> | Development stage: | Conceptualized |
| | Determine whether using the 511 information system has the same impacts on driver performance and safety as a free conversation via the cell phone. | | | |
| G26 | Effectiveness of VMS Using Empirical Loop Detector Data | | | |
| | Hong Huo, David Levinson | | | 2006 UCB-ITS-PWP-2006-04 |
| | http://www.path.berkeley.edu/PATH/Publications/PDF/PWP/2006/PWP-2006-04.pdf | | | |
| | Tech Type: Variable Message Sign | Goals Enabled | | |
| | Tech Enablers: | | Assessment method/s: | travel time savings, vehicle hours reduction |
| | Applicable to Mode/s: All Road Traffic | Applicable to Freight: <input type="checkbox"/> | Development stage: | Implemented |
| | The result of the statistical analysis shows that VMS is an effective tool in route guidance and can increase drivers' diversion rate significantly. The nature of the incidents is a factor to influence the diversion behavior. | | | |
| | VMS is more effective in light traffic than heavy traffic. | | | |
| L4 | Enhancing freight and logistics management and decision | | | |
| | IBM Corporation | | | 2006 |
| | ftp://ftp.software.ibm.com/software/lotus/lotusweb/workplace/solution/Freight_and_Logistics_solution | | | |
| | Tech Type: Information system | Goals Enabled | Congestion reduction and management | |
| | Tech Enablers: | | Assessment method/s: | |
| | Applicable to Mode/s: Transit | Applicable to Freight: <input checked="" type="checkbox"/> | Development stage: | Implemented |
| | Enhancing freight and logistics management | | | |

| Perspective | Technology Driven | Category | Traveler Information System | Sub-category |
|--------------------|---|--|--|--|
| L50 | Intelligent transportation systems and vehicle-highway automation | | | |
| | Washington, D.C. National Research Council | | | 2006 Transportation Research Board (TRB), 2006. (TRR 1944) |
| | Tech Type: Information system | Goals Enabled | Congestion Reduction and Management | |
| | Tech Enablers: | | Assessment method/s: | |
| | Applicable to Mode/s: | Applicable to Freight: <input type="checkbox"/> | Development stage: | |
| | A collection of papers related to ATIS. | | | |
| | Transportation Research Board (TRB), 2006. (TRR 1944) | | | |
| L47 | Exploring User Behavior In Online Network Equilibrium Problems | | | |
| | Patil, Gopal R ; Ukkusuri, Satish V | | | 2007 Transportation Research Board 86th Annual Meeting |
| | Transportation Research Board Business Office | | | |
| | Tech Type: Algorithm | Goals Enabled | Congestion Reduction and Management | |
| | Tech Enablers: | | Assessment method/s: | |
| | Applicable to Mode/s: | Applicable to Freight: <input type="checkbox"/> | Development stage: | |
| | a methodology which accounts for user's recourse in the traffic assignment problem is proposed | | | |
| | The provided link is used for ordering the document. | | | |
| L46 | Location-Based Dynamic Route Guidance System of Korea: System Design, Algorithms, and Initial Results | | | |
| | Park, Dongjoo ; Kim, Hansoo ; Hong, Seokki ; Lee, Chungwon ; Choi, Changho | | | 2007 Transportation Research Board 86th Annual Meeting |
| | Transportation Research Board Business Office | | | |
| | Tech Type: Advanced traveler information | Goals Enabled | Congestion Reduction and Management | |
| | Tech Enablers: Information system | | Assessment method/s: | |
| | Applicable to Mode/s: | Applicable to Freight: <input type="checkbox"/> | Development stage: Demonstrated | |
| | The paper presents the performance of a location-based dynamic route guidance system in Korean. The results show the accuracy of the predicted travel time and the soundness of the traffic suggestions are acceptable. | | | |
| | The link provided is used for ordering the document | | | |

L44 Assisting Multimodal Travelers: Design and Prototypical Implementation of a Personal Travel Companion.

Rehrl, Karl; Bruntsch, Stefan; Mentz, Hans-Joachim

2007 IEEE Transactions on Intelligent Transportation Systems

<http://ntlsearch.bts.gov/tris/search.do?b1=1&f1=0&t1=kw%3Aadvanced+kw%3Atraveler+kw%3Ainfo>

Tech Type: Information system

Goals Enabled Congestion Reduction and Management

Tech Enablers:

Assessment method/s:

Applicable to Mode/s:

Applicable to Freight:

Development stage: Prototyped

present a prototype for a digital personal travel companion capable of handling multimodal logistical planning.

G69 Interactive Touch Screens for New York City Taxi Passengers

Jennifer Peltz

2007 News article

http://www.newsvine.com/_news/2007/05/10/712099-nyc-taxi-cabs-offer-high-tech-hardware

Tech Type: Information System

Goals Enabled

Tech Enablers:

Assessment method/s:

Applicable to Mode/s: Taxi

Applicable to Freight:

Development stage: Implemented

Touch screen monitors that provides useful activity information and electronic payment options to passengers.