

DRISI

CALTRANS DIVISION OF RESEARCH,
INNOVATION AND SYSTEM INFORMATION

TRANSFORMING IDEAS INTO SOLUTIONS

Research

Notes

Advanced
Research

MAY 2024

Project Title:
Partners for Advanced
Transportation Technology (PATH)
Research Program Management

Task Number: 3789

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Completion Date: May 31, 2024

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California PATH Program Management FY 2021 to FY 2023

To identify and execute a diversified portfolio of multi-disciplinary transportation research projects with collaboration among PATH staff, UC Berkeley faculty, and postgraduate research students.

WHAT IS THE NEED?

Caltrans needs an academic partner to assist in the task of understanding, considering, and utilizing Intelligent Transportation System (ITS) technologies that may be exceptionally beneficial to California's travelers. PATH Research Center is a critical component in the statewide ITS Research Program focusing on improving mobility and safety with advanced ideas, technologies, and a deployment emphasis. It provides Caltrans the tools needed to meet its Safety and System Performance goals by conducting leading-edge research, evaluating and conducting controlled experiments and field operational tests, and developing public/private/academic partnerships, using the expertise of a knowledgeable and experienced staff in ITS research.

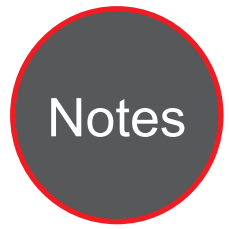
WHAT ARE WE DOING?

In partnership with Caltrans staff, the PATH research team will assist the Department in the following research focus areas:

Transportation Safety Research Program: focuses on investigations of driving behavior, efficient means to investigate crashes and identify solutions, collision avoidance systems, safety and mobility applications for connected vehicle (CV) and automated vehicle (AV) systems, safety performance of highway networks and managed lanes and provide for increased safety and mobility by focusing on the communications technologies, which is the basic premise and promise of Connected Vehicles.



DRISI provides solutions and
knowledge that improves
California's transportation system



Traffic Operations Research Program: focuses on advancing the state-of-the-art in traffic management and traveler information systems and producing results that can be implemented in the field. Ongoing research projects fall in the following major categories: CV/AV test-bed development and deployment, integration of traffic signals and ramp meters, integrated corridor management (ICM), variable speed limits and coordinated ramp metering for freeway traffic control, traffic surveillance, methodologies for data processing, analysis and performance measurement, development and application of modeling tools, and formulation and testing of advanced operational strategies for intersections, arterials, freeways and corridors.

Mobility and Multi-Modal Applications Program: encompasses a wide variety of activities including the integration of vehicular and infrastructure technologies that improve safety and mobility including passenger, transit, and heavy vehicles. PATH research team will work closely with transit and traffic operation agencies to address real world problems in Bus Rapid Transit (BRT), adaptive transit signal priority, seamless connection among different transport modes, transit safety, connected transportation, and automated vehicle activities.

CV/AV Applications Development Program: focuses on a variety of applications development activities, including truck platooning, cooperative adaptive cruise control, Eco-Driving, connected automation, adaptive traffic signals based on CV/AV data, signal preemption, intelligent signals and pedestrian assistance are few to mention.

WHAT IS OUR GOAL?

To develop solutions to the problems of California's surface transportation systems through cutting edge research by harnessing the knowledge of transportation researchers, working in conjunction with experts in the fields of information technology, electrical engineering, civil engineering, mechanical engineering, economics, transportation policy, and behavioral studies.

WHAT IS THE BENEFIT?

PATH Research Center is beneficial for the success and growth of the Department's multi-disciplinary, multi-campus research program involved in ITS research by providing research management services. Working closely with Caltrans staff, PATH will identify potential synergistic ventures between State and National level research programs, solicit and secure external funding from a variety of sources to leverage the core research support funded by Caltrans, provide outreach, and serve as a liaison between Caltrans and other federal and state agencies nationwide.

WHAT IS THE PROGRESS TO DATE?

The Office of Traffic Operations Research (TOR) secured a one-year no-cost extension for this task to finish ongoing CAV research projects which include efforts on CAV Application Deployment Roadmap, CAV Training Academy, SMART Intersection Safety Challenge and vRSU Pilot.