DRISI

CALTRANS DIVISION OF RESEARCH, INNOVATION AND SYSTEM INFORMATION

# Research Notes

## Automated Vehicle (AV) Testing Data Sharing and Data Analytics

Planning tool to provide Caltrans Districts Engineers guidance on RSU placement for CAV applications

Advanced Research

MAY 2024

Project Title:
Automated Vehicle (AV) Testing Data Sharing and Data Analytics

Task Number: 4152

Start Date: May 1, 2024

Completion Date: June 29, 2025

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### WHAT IS THE NEED?

As Connected and Automated Vehicles continue to advance from research towards deployment, many optimists predict that fully automated vehicles will be introduced to public roadways soon. However, there are variety of open questions and issues that need research, planning, and resolution at State and local transportation agencies to enable successful broad deployment. One of the questions that need exploration is "what transportation infrastructure improvements or modifications are needed to improve automated vehicle (AV) performance?" In order to explore this question, a survey was conducted in 2020, in which 20 AV companies were surveyed regarding infrastructure needs for large-scale AV deployment. The surveyed companies include automated car start□up companies; automated truck start□up companies; AV technology provider start□up companies; traditional automotive car manufacturers; and traditional automotive parts manufacturers.

During communications with these AV companies, many of them expressed the willingness to have interactive engagement with the public agencies and share their AV testing data for the purpose of better maintaining the public roadway infrastructures. Therefore, under project we have the opportunity to optimize Caltrans planning, operations, and maintenance by using the big data collected from AV sensors for example inspecting the roadway conditions and identifying the maintenance priorities.

Under this project meaningful communication between the government agencies and the AV industry will be conducted. Therefore, one goal of this project is to establish an effective strategic and collaboration between AV companies and Caltrans regarding data sharing. The other goal is to establish

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the methodology and best practice of sharing AV testing data and demonstrate the value of data exchange that can be used for Caltrans' planning, operations, and maintenance.

## WHAT ARE WE DOING?

This task will take care of the following activities.

1. Conduct a review the background, current state of art, and near-term use of AV testing data generated by automated driving systems (ADS)
2. Explore and build innovative partnership between AV companies and Caltrans regarding AV
3. Obtain AV testing data from the companies who agree to share data for this project
4. Conduct data transfers, data quality control and data storing management.
5. Conduct data analytics and data visualization.

## WHAT IS OUR GOAL?

The goal of this Agreement is to produce a report that provides specific recommendations for Caltrans regarding engaging with AV industry companies for data sharing, best practices of data sharing, valuable applications of utilizing the AV testing data for Caltrans' planning, operation, and maintenance.

## WHAT IS THE BENEFIT?

Results of this project will help Caltrans in planning for optimizing
Caltrans planning, operations, and maintenance efforts by using the big data collected from AV sensors

## WHAT IS THE PROGRESS TO DATE?

Project was executed on May 1, 2024.