California Connected Vehicle (CV) Test-Bed Support

Maintaining California testbed and provide a real-world setting for future connected vehicle technology development.

WHAT IS THE NEED?

In the past, the United States Department of Transportation has provided financial and technical support to California Department of Transportation (Caltrans) for developing the Dedicated Short Range Communication (DSRC) infrastructure on its testbed site along El Camino Real in Palo Alto. The testbed needs to be maintained and supported for other Caltrans projects, as well as for projects to be conducted by other public and private sector organizations.

DSRC at 5.9 GHz (75 MHz Bandwidth) provides a unique capability to deliver time-critical, safety-critical messages between the roadside infrastructure and vehicles with high reliability and low latency. This band was allocated by Federal Communication Commission for Intelligent Transportation System’s use. In collaboration with private and academia, Caltrans is in the process of developing applications based on connected vehicle (CV) technology.

This task is a part of the Vehicle Infrastructure Integration project. The primary goal of this project is to enhance the capabilities and dimension of the testbed for the development of transportation applications. These applications include, but not limited to, Curve Over Speed Warning System, Traffic Probe Data Processing, and Intersection Safety and Mobility Applications.

WHAT ARE WE DOING?

This task involved the following activities:

1. Regular maintenance of the testbed including special setup requests from various users
2. New users support
3. Collaboration with the national network of test-beds
4. Increase in potential users’ awareness of the testbed
5. Regular software/hardware upgrade and testbed capabilities enhancement
6. Radio coverage study of the DSRC footprint

WHAT IS OUR GOAL?

The goals of this project is to keep the DSRC testbed fully operational and compliant with national standards, which would allow private and public parties to develop and test CV applications in a real-world setting.

WHAT IS THE BENEFIT?

The testbed provides a platform for software developers who will be developing transportation applications that will reduce travel times, save fuel, and improve safety for drivers. Caltrans and the public are the primary beneficiaries, as the developed applications will help Caltrans to better manage traffic flows and reduce carbon footprint.

WHAT IS THE PROGRESS TO DATE?

The testbed website was opened for public access in August 2017. Visit the testbed website at http://caconnectedvehiclestestbed.org for more information.