

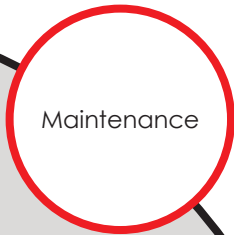


Caltrans Division of Research,
Innovation and System Information

Research



Results



Maintenance

DECEMBER 2016

Project Title:
Support for Avalanche Sensing
and Communications

Task Number: 2771

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Support for Avalanche Sensing and Communications

Sensors can gather the needed data to support maintenance decisions to induce controlled avalanches to improve safety

WHAT WAS THE NEED?

Avalanches pose a challenging problem for roadways traversing mountainous areas of California. An unexpected avalanche can shut down roads and endanger motorists. Conducting controlled avalanches reduces the number of naturally occurring avalanches, resulting in improved safety and lower maintenance costs. To safely trigger an avalanche requires accurate information to determine the best time and conditions. Sensors can provide the needed data, such as snow depth, temperature, wind speed, and wind direction, as well as camera imaging. This research task is the continuation of a previous effort: Task ID 1810 Field Operations for GPS assisted Winter Maintenance Vehicles (Avalanche Sensing). Task ID 1810 built a prototype avalanche sensing and detection system which measures wind speed, temperature, and snow surface heights, and provides video to give maintenance workers data to support decisions on when to initiate a controlled avalanche. Task ID 2771 was needed to complete the field testing of the prototype that was developed in Task ID 1810.

WHAT WAS OUR GOAL?

The goal was to investigate commercially available components to build an avalanche sensing and detection system and test it for one snow season.

WHAT DID WE DO?

Caltrans, in partnership with the University of California, Davis Advanced Highway Maintenance and Construction Technology (AHMCT) Research Center, designed and built a prototype avalanche sensing and detection system using commercially available parts. This system was partially completed under Task 1810.



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