Maintenance

MAY 2024

Project Title: Equipment Simulators

Task Number: 4299

Start Date: June 1, 2024

Completion Date: TBD

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Heavy Equipment Simulator Training Optimization

This project plans to provide an optimized heavy equipment simulator training for use in Caltrans maintenance.

WHAT IS THE NEED?

The California Department of Transportation (Caltrans) is looking to improve the training program it provides to its Maintenance personnel operating heavy equipment. Prior research done under Task ID 3833 has proven that training using heavy equipment simulators is beneficial to Caltrans. Caltrans would benefit from an optimized simulator training program to support training efforts at the Maintenance Equipment Training Academy (META) and in the Districts.

WHAT ARE WE DOING?

In this research, the Advanced Highway Maintenance and Construction Technology (AHMCT) Research Center at the University of California (UC) Davis will conduct human subject research using META's John Deere simulator and fully immersive Caterpillar simulator with its optional virtual reality glasses. A CM-Labs minimal immersion desktop simulator system will also be used by UC Davis student volunteers to test training routines before being performed by Caltrans trainers on Caltrans premises. The results of the study are expected to allow the quantification of factors such as the training effectiveness ratio (TER). AHMCT will provide training schedules, tasks, and logistics recommendations for Caltrans' Division of Maintenance's training program. The results will be compiled in a final report summarizing the study results and future recommendations.

WHAT IS OUR GOAL?

The goal of this project is to evaluate the effectiveness heavy equipment simulator training and see best to improve Caltrans' training efforts.

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WHAT IS THE BENEFIT?

The results of this research will lead to a more optimal training program for Caltrans. A well-defined training program will lead to a safer training environment and reduce training costs. This research will also allow Caltrans estimate return on investment using quantification of factors such as the training effectiveness ratio (TER).

WHAT IS THE PROGRESS TO DATE?

As of May 2024, contract has been reviewed by contract analyst and sent to Caltrans Legal for review and approval.