

DRISI

CALTRANS DIVISION OF RESEARCH,
INNOVATION AND SYSTEM INFORMATION

TRANSFORMING IDEAS INTO SOLUTIONS

Research

Notes

Rural

NOVEMBER 2023

Project Title:
Evaluation of Next Generation
CCTV Encoders for ITS Field Elements

Task Number: 3873

Start Date: January 4, 2021

Completion Date: June 30, 2023

Task Manager:
Sean Campbell
Senior Transportation Engineer,
Electrical (Specialist)
sean.campbell@dot.ca.gov

Evaluation of Next Generation CCTV Encoders for ITS Field Elements

Updating and Evaluating Caltrans ITS Infrastructure

WHAT IS THE NEED?

The California Department of Transportation (Caltrans) has and is currently installing Intelligent Transportation System (ITS) Closed-Circuit Television (CCTV) sites in multiple areas around the state. Unfortunately, not all manufacturer specifications measure attributes using the same methodologies. In addition, many manufacturers now produce products that provide high throughput but cannot stream video at the ultra-low-speed throughputs needed at remote sites in the rural areas of the state. In rural districts, many CCTV sites have communication options limited to plain old telephone service (POTS) to transport data, often at 10 kbps or less.

Caltrans needs an equipment evaluation test performed under Caltrans rural operating conditions and environments to determine if the CCTV video encoders will meet Caltrans performance measures.

WHAT ARE WE DOING?

This project will determine how video encoder equipment performs under real-world Caltrans rural operating conditions. The Advanced Highway Maintenance and Construction Technology (AHMCT) Research Center will determine and evaluate which next-generation video encoder equipment will be viable as Caltrans ITS assets.

WHAT IS OUR GOAL?

To determine and evaluate which next-generation video encoder equipment will be viable as rural ITS field equipment options as Caltrans adds to and refreshes its ITS assets. An evaluation will be provided based on performance of the chosen video encoder equipment.



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WHAT IS THE BENEFIT?

Caltrans-specific evaluation will allow testing of next-generation video encoder equipment under real-world Caltrans conditions.

WHAT IS THE PROGRESS TO DATE?

- The research team has completed Task 2, which identified Caltrans rural operating conditions and gaps related to CCTV encoder systems.
- Included a description of field conditions as well as characteristics of rural communications channels for the resulting images. Identified any known gaps related to Caltrans use of CCTV encoders in rural environments. Finally, the task identified the categories of CCTV encoder systems to be evaluated in the following research tasks.
- CCTV equipment was loaned from District 3 and provided to the research team for evaluation.
- CCTV equipment was purchased from a variety of vendors selected by the technical advisory team. Due to supply chain issues, the research team has requested a no cost, time extension for the project. A new end date was approved for June 30, 2023.
- The research team has developed a set of testing criteria for the selected equipment based on Caltrans needs and field conditions.
- The research team has received some equipment procured in 2022, but was unable to procure the necessary equipment necessary to complete this project. As with many recent Caltrans' ITS equipment procurements, the supply chain has been a significant roadblock to the completion of this project and projects Department wide.
- The team is wrapping up this project and developing a final report, which will be out in November 2023.