

ITS Field Operational Test Summary

Mobile Surveillance/Wireless Communication

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Introduction

The Mobile Surveillance/Wireless Communication (MobileComm) ITS Field Operational Test addresses traffic management challenges in areas where traditional traffic detection and ramp metering systems are not available. The test uses portable trailers to provide a combination of video image traffic detection, ramp metering, and data and control transmission. The system is being evaluated in the City of Anaheim, California and on Interstate 5 in Orange County, California.

There are two tests of the system at different locations. Test II, in the City of Anaheim, operated in the spring of 1997. Test I, on the Interstate, will operate in the spring of 1998. The results of the test are being evaluated and the final report is expected in December 1998. This cooperative effort includes partners from both the public and private sectors.

Project Description

Traditional buried loop traffic detectors coupled to surface communications lines are costly to install, are subject to interruptions during construction, and generally cannot provide surveillance and communications cost-effectively at special events or remote locations. This operational test implements and evaluates an integrated mobile system that provides traffic surveillance and control capabilities in areas where traditional loop detectors are disabled or not installed.

The test system consists of three components. The video image processing (VIP) component houses equipment to detect traffic volumes and speeds and to relay data. The ramp metering component contains ramp metering equipment (portable traffic signal heads) that operates in concert with the VIP equipment to regulate traffic. The communications component provides spread spectrum radio communications to communicate data and signal control instructions between the portable units and control and observation centers. There are three control and observation centers, the CalTrans District 12 Traffic Management Center (TMC), the City of Anaheim TMC, and the University of California Irvine Institute of Transportation Studies. An enclosed surveillance trailer houses the VIP and communications component. An open trailer houses the ramp metering component. Figure 1 presents a typical installation on a freeway entrance ramp.

In Test II, the surveillance trailers were deployed to assist with the management of special events in the City of Anaheim. In Test I, surveillance units and ramp meter trailers will be set up on selected Interstate 5 freeway entrance ramps. The surveillance trailers will also be used in conjunction with the ramp metering trailers on I-5.

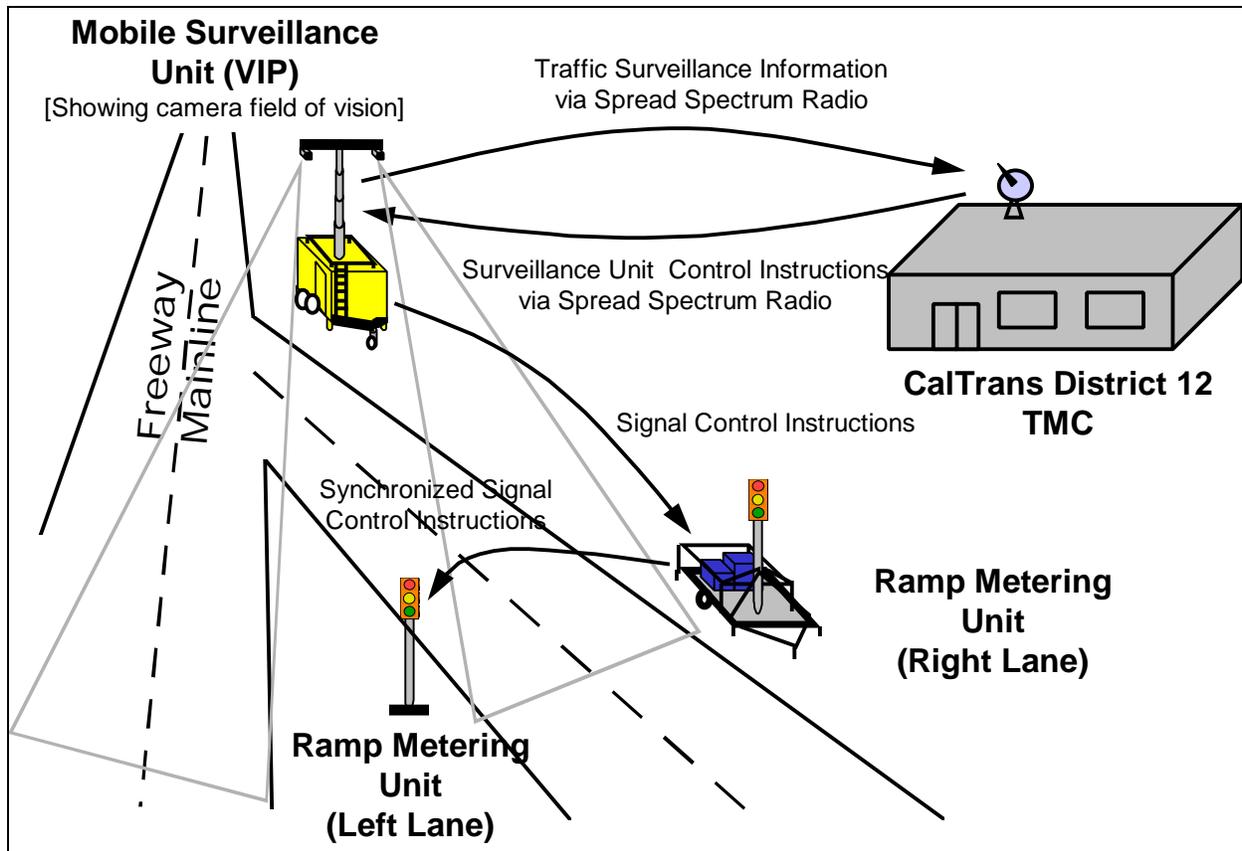


Figure 1: Typical Entrance Ramp Installation

The evaluation of the test results focuses on the performance, portability, and stand-alone benefits of the mobile surveillance system. The evaluation is assessing the performance of the components of the system and their portability. It will also assess the cost of the deployed system and the institutional issues encountered during the test.

Test Status

Interim results are not available at this time. The Final Report is expected in December 1998.

A magazine article describing the use of this technology to manage special events (Test II), indicated positive benefits. This article quoted a test evaluator describing a 37 percent reduction in average parking lot exit time compared to not using the equipment.

Test Partners

- California Department of Transportation
- California Highway Patrol
- City of Anaheim
- Federal Highway Administration
- Hughes Aircraft Company Transportation Management System
- University of California at Irvine

References

Taylor, Steven T., "Crowd Pleaser," ITS World, January/February 1998