



Priority, Market-Ready Technologies and Innovations

Adaptive Control Software Lite (ACS-Lite)

New

OPERATIONS

Problem: Ineffective signal timing contributes to increased traffic congestion

Outdated signal timing accounts for 5 to 10 percent of all traffic delay, or 295 million hours of vehicle delay on major roadways alone.¹

Solution: By adjusting traffic signal timing according to current traffic conditions, congestion levels can be significantly reduced.

Adaptive Control Software-Lite improves the efficiency of traffic signals and prolongs the effectiveness of traffic signal timing by updating phase splits and offsets in response to current traffic conditions.

Benefits

Reductions in travel time (up to 35 percent), delay (up to 29 percent), and fuel consumption (up to 7 percent) were evident at each test site as a result of ACS-Lite operation during peak periods.

Successful Applications: Integrating software with controllers in field tests

Four field tests were commissioned to integrate and test the software with traffic signal controllers manufactured by the four participating private sector partners. The test sites were located in Gahanna, OH, Houston, TX, Bradenton, FL, and El Cajon, CA. ACS-Lite has also been deployed in Tyler, TX.

ACS-Lite is designed to work on arterials equipped with Closed Loop Traffic Signal Systems. The system is not recommended for grid systems.

Deployment Statement

Incorporating ACS-Lite into Closed Loop Traffic Signal Systems can reduce traffic congestion, fuel consumption, and travel time.

Deployment Goal

The fiscal year 2008 goal is to initiate five deployments of ACS-Lite and to identify five additional sites for potential deployment. The desired outcome is that the number of deployments doubles each subsequent year.

Deployment Status

ACS-Lite is eligible for Federal aid. The FHWA Resource Center Operations Technical Services Team will provide workshops, training, and technical assistance for agencies interested in pursuing deployment.

ACS-Lite is only available through the four participating vendors: Eagle/Siemens, Econolite, McCain, and Quixote/Peek.

The public/private partnership formed to develop ACS-Lite will also facilitate deployment tracking. The FHWA Office of Operations will meet regularly with the vendors to gauge and report deployment progress.

Additional Resources

http://www.ops.fhwa.dot.gov/acs_lite/index.htm

¹ *Temporary Losses of Highway Capacity and Impacts on Performance: Phase 2*. Report No. ORNL/TM-2004/209. Oak Ridge, TN: U.S. Department of Transportation, Oak Ridge National Laboratory, November 2004.

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