Centracs® Adaptive
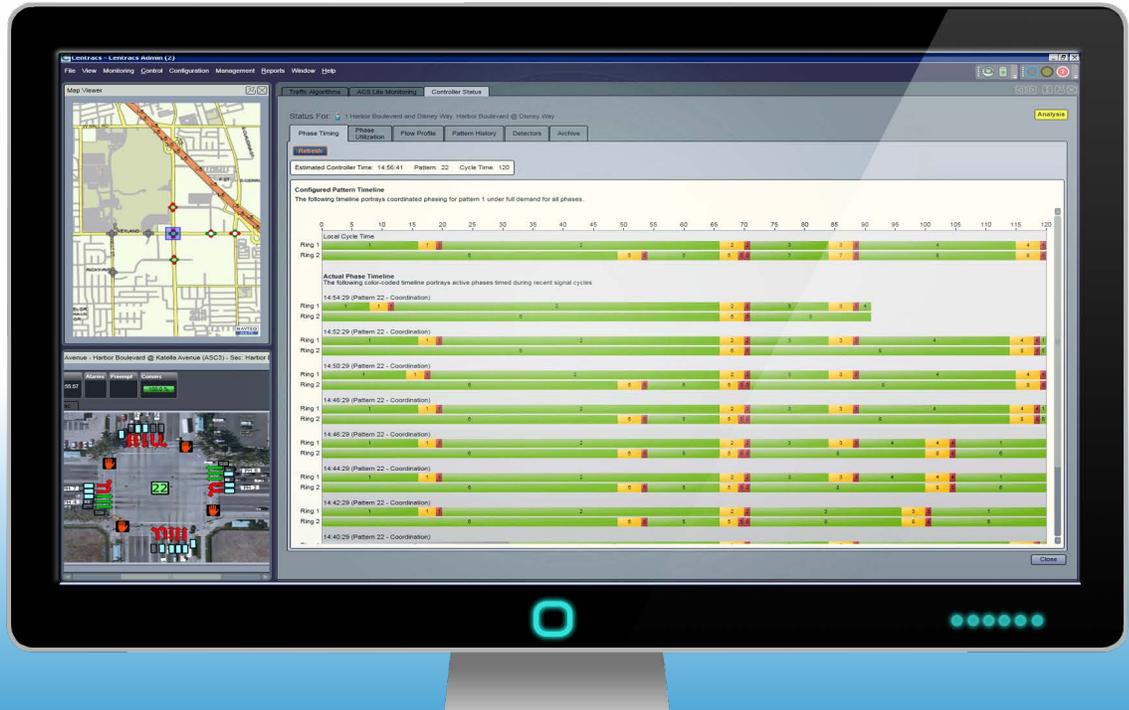
▷ ▷ Centracs Adaptive is designed for transportation agencies seeking to significantly improve traffic mobility over pre-programmed signal timing plans.

About Centracs Adaptive

Centracs Adaptive captures the benefits behind the development of the original ACS Lite – the original adaptive control software designed to adapt signal timing plans to accommodate traffic flow changes. Econolite incorporates unique improvements to ACS Lite into Centracs Adaptive.

Integrated in Econolite's Centracs ATMS, centralized Advanced Transportation Management System, Centracs Adaptive is designed for transportation agencies seeking to significantly improve traffic mobility over pre-programmed signal timing plans. Centracs Adaptive is a true Adaptive Signal Control software that actively reallocates and adapts signal timing as necessary to improve traffic flow, including unpredictable or unexpected traffic conditions. Centracs Adaptive is one of the most cost effective Adaptive Signal Control systems available.

- Eases traffic congestion – reduces stops, delays and travel times
- Reduces vehicle emissions and production of greenhouse gases
- Often leverages existing detection to a large extent
- Requires no calibration/tuning

> ▷ "I was able to deploy *Centracs Adaptive* using mostly existing detection equipment. Since adaptive signal control is integrated with *Centracs*, I can upload and download, or key in controller configuration changes, and the adaptive system stays automatically synchronized."
>
> ◉ John Thai, Principal Traffic Engineer for City of Anaheim

ECONOLITE

A Mounting Problem

The impact of traffic delays and congestion are far reaching. While the causes can vary, many of the consequences are universal: increases in citizen complaints, driver frustration, fuel consumption, and production of greenhouse gases and pollution; with correlating decreases in safety, mobility, and quality of life. National surveys (National League of Cities, Pew Research Center) have found that over the course of the last decade, traffic congestion has risen to a top-ranked concern for communities across the nation, second only to job availability.

According to the Federal Highway Administration (FHWA), outdated conventional traffic signal timing represents 10 percent of all traffic delay and congestion on major routes. Compounded by unpredicted traffic volume increases, special events, traffic accidents, and roadway construction, the increase in traffic congestion can be paralyzing to mobility. The 2011 Annual Urban Mobility Report found, in 2010, traffic congestion costs about $115 billion in wasted time and fuel. This also directly impacts transportation agencies, requiring extra resources to continually address driver complaints, compiling traffic data, analyzing the data, and adjusting individual signal timing manually. To make matters worse, projections indicate that traffic congestion will continue to worsen.

What Can Be Done?

In simplest terms, 'improve traffic flow.' Adaptive Signal Control, combined with a highly functional signal timing system, is specifically designed to improve traffic flow. Adaptive Signal Control continuously adjusts and distributes green time to enhance traffic movements, and as a result, improves travel time reliability, reduces traffic congestion levels, and accommodates variable/unpredictable traffic demands. Moreover,

Centracs Graphical User Interface (GUI)

⊙ Centracs Adaptive is easy to configure through the Centracs GUI. There is minimal data entry because much of the configuration data is uploaded directly from the local controllers. After uploading the configuration data, the user configures links, detector configurations, and tuning parameters through the GUI. After the configuration is completed Centracs Adaptive control is managed through the Centracs scheduler, providing maximum control over when Centracs Adaptive is operational. As the system runs, the Centracs database is continually updated to provide status reports, allowing users to track the changes that Centracs Adaptive makes to the splits and offsets. In addition, Centracs archives adaptive adjustments, and controller and detector status data to a file for future analysis. Centracs Adaptive and its user interfaces are natively implemented in Centracs. This allows any user with the Centracs client software to securely access Centracs Adaptive tools and reports locally and remotely via the Internet over a VPN connection.

Adaptive Signal Control extends the effectiveness of signal timing strategies.

Field evaluations of the adaptive technology (now integrated in Centracs) have shown average improvements aggregated over all measured time periods and over each arterial direction to yield:

11% less travel time*
27% reduction in delays*
28% reduction in stops*
8% reduction in vehicle emissions*
17% reduction in side street queue delays*

* Steve Shelby, PhD. - *Centracs Adaptive* - Simulation and Real-World Results, presented at Transportation Research Board, January 2012