Transportation Management Systems

What, exactly, is Centracs?

Centracs ATMS. Centracs is an intuitive GUI-based enterprise-class traffic software solution, providing powerful and flexible ITS management, traffic control, and data sharing in a single ATMS platform. Centracs leverages proven and robust client-server architecture and distributed processing for adding ITS system modules. This provides unmatched return on investment through system scalability, communications, and implementation of various ITS strategies. It enables agencies to employ customized configurations to meet the specific needs unique to any traffic operations.

Why do agencies use Centracs?

ATMS enable agencies to monitor traffic throughout an entire transportation network and make real-time decision making from a Traffic Management Center (TMC). The ATMS allows a minimal staff to manage an entire traffic operation from the TMC.

How does Centracs benefit the driving public?

Centracs provides agencies real-time management capabilities for their roadway network, ensuring the highest levels of safety and mobility for all roadway users.

Graphical User Interface and "Containers"

Modern Graphical User Interface (GUI) design is an integral part of Centracs 2.0. The intuitive GUI provides a short system learning curve, helping new users to immediately become productive while allowing experienced users to leverage the full power of Centracs 2.0's advanced features. Centracs 2.0 offers an extensive and flexible suite of tools, encouraging users to establish individual workflows and environments for increased efficiency.

User versatility is made possible by the Centracs 2.0 user interface, which utilizes powerful "Container" technology. Containers assist the user in managing the various maps, status, and control screens by enabling the user to drag-and-drop open windows into containers.

Interactive GIS Based Maps

The modern GIS map technology and rendering tools behind Centracs 2.0 map interfaces make the map a truly convenient tool for managing and monitoring field devices. Simple mouse gestures are used to pan and zoom, while the Centracs 2.0 Container technology allows users to customize, display and store multiple maps. Agencies can select from a variety of commercial or government GIS data sources including their own GIS databases. The local intersection map editor in Centracs 2.0 is easy to use allowing users to add fully functioning intersection displays in a matter of minutes.
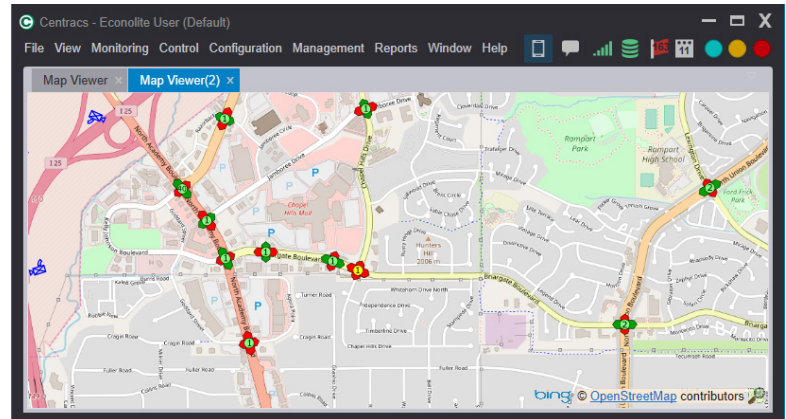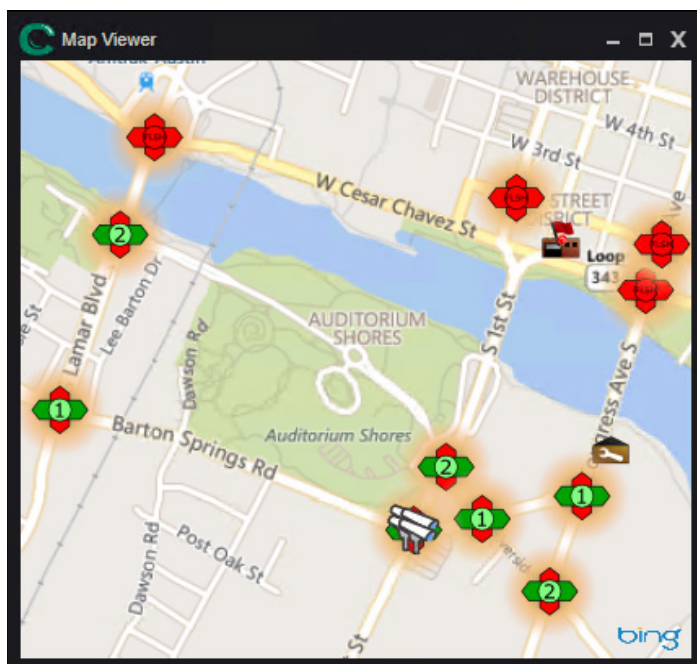
Centracs 2.0 takes care of the positioning and sizing of contained windows, leaving the user free to focus on more important tasks. When a user exits Centracs 2.0, the entire layout is remembered and then restored on the next login. Additionally, all system configuration actions are performed through the GUI - no need to edit configuration text files or registry entries.

Scalable Architecture

Centracs 2.0 implements a distributed layer architecture providing scalability and expandability. The "Core" or application server manages the system scheduler, traffic control algorithms, field device time management, alert generation, and more. Communication or "Comm Servers" perform the communications to field devices. The entire system can reside on a single computer or it can be spread across multiple computers. This allows Centracs 2.0 to efficiently manage a small agency's needs on a single, inexpensive computer, or to scale up for a large agency needing to manage thousands of devices by distributing the processing across multiple computers.

Powerful Traffic Management Tools

The true value of a modern ATMS system depends on the tools provided to monitor and manage the system. Centracs 2.0 offers a wide range of reports and real-time monitors for nearly every aspect of the system. Real-time detector monitors, Time-Space and split monitors, coordination, Traffic Responsive, communication status, system performance monitors, alert monitors and detailed reports allow the various users of the system to track those aspects of the system that are most important. A real-time text-mode remote front panel for ASC/3 and Cobalt controllers allow Centracs 2.0 users to interface with controllers as if they were standing at the intersection. The signal database editor for Cobalt and ASC/3 controllers offers advanced features such as timing templates, spreadsheet style editing features and version management. Whether the user is a Traffic Engineer, a TMC manager, a System Administrator, or a signal shop manager, Centracs 2.0 provides the most effective tools for the job.

Communications and Device Support

Robust, dependable communication to field devices is key to a successful ATMS system and is a critical component of Centracs 2.0. Most communications media is supported, including fiber optics, twisted-pair, leased lines, and wireless. Protocol support includes: TCP/IP, UDP/IP, RS232 serial, ACT, PMPP, STMP, and SNMP. Traffic signal device support includes: Econolite's NTCIP-based Cobalt, ASC/2, ASC/2S,

and ASC/3 (1000, 2100, or Rack Mount) NEMA TS1/TS2 controllers, 2070 (L or LN) controllers running ATC/2070, ASC/3 2070, or Oasis firmware, or controllers running EPAC version 4.01D,170-type controllers running certain versions of Wapiti W4IKS firmware, and NTCIP 1202 compliant controllers.

Centracs Maintenance Management System (MMS) (optional)

Centracs 2.0 MMS is a simple to use GIS-based asset management and maintenance system. It allows ITS and signal maintenance organizations to track assets in real-time through the products' entire life cycle. Offering both workstation and mobile device interfaces, it supports preventative maintenance planning and execution along with trouble ticket dispatch and work-order scheduling. Centracs 2.0 MMS is available as an optional module to Centracs 2.0, or as a stand-alone system.

Centracs DCMS (Data Collection Management System) (optional)

Centracs 2.0 DCMS turns new or existing detection systems into virtual count stations that gather and distribute traffic data without interruption, providing the accurate information needed for faster incident response, real-time changes to traffic signal timing,
or to anticipate special event traffic conditions.

Centracs Adaptive Module (optional)

Centracs 2.0 Adaptive is an arterial-based adaptive control module. Centracs 2.0 Adaptive uses the Centracs 2.0 native interface, simplifying the creation and management of adaptive intersection groups or sections. As a bonus, while the Centracs 2.0 Adaptive algorithms adjust splits and offsets, cycle length adjustments can be achieved by coupling our adaptive software with Centracs 2.0 Traffic Responsive techniques. Working directly with Econolite's ASC/3 controller software and avoiding adding undesirable hardware at the cabinet, Centracs 2.0 also allows the creation of multiple groups that can easily be managed using the Centracs 2.0 Time-of-Day scheduler. The power of Centracs 2.0 Adaptive provides a cost effective means of achieving real and measurable improvements in traffic flows without the cost of adding new servers, hardware, and by using existing controller coordination plans and existing communications channels.

Advanced Measures of Effectiveness (MOE) Module (optional)

The Centracs 2.0 MOE module was developed in conjunction with Purdue University. These reports use high density detector data collected 10 times per second from ASC/3 and Cobalt controllers to offer users a unique set of tools for understanding the factors influencing coordination and the effectiveness of timing at the intersection.

Dynamic Message Sign (DMS) Management (optional)

The Centracs 2.0 DMS module provides users the direct and instantaneous control to update and display valuable traveler information messages. By providing timely traffic condition or incident messages, Centracs 2.0 DMS can help provide congestion mitigation and increase roadway safety.

Server-to-Server Module (optional)

The Centracs 2.0 Server-to-Server module provides a unique interface allowing agencies to achieve unparalleled benefits through cooperative operations and system management. Adjoining Centracs 2.0 - managed cities can seamlessly share data and manage arterial traffic across agency boundaries providing true Center-to-Center communications. Centracs 2.0 Server-to-Server also allows agencies to participate in cross-jurisdictional management and monitoring of neighboring agency intersections.

CCTV (optional)

Close Circuit Television (CCTV) cameras have proven a valuable tool for many agencies. Econolite offers the Centracs Advanced CCTV module as an optional component of the Centracs ATMS. This module is an enterprise-class IP video surveillance solution that provides seamless management of digital video across IP networks.

Centracs Optional Modules

- Centracs MMS
- Centracs DCMS
- Centracs Travel Time
- Centracs Adaptive
- Centracs MOE
- Centracs DMS
- Centracs Server-to-Server
- Centracs CCTV
- Centracs SPM

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