CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

Adaptive Traffic Control System

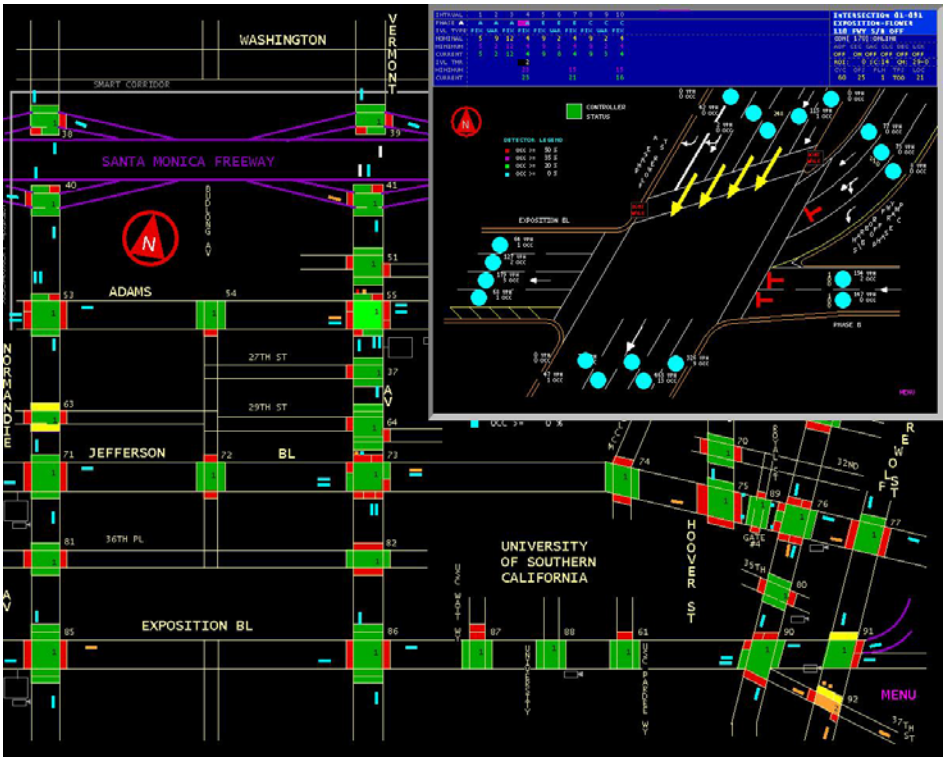
Designed and developed by Traffic Engineers for Traffic Engineers

Key Features:

1. PC Based Real-Time Traffic Control System
2. Fully Adaptive operation
3. Phase split calculation
4. Cycle-length calculation
5. Offset calculation
6. Control up to 512 I/S per ATCS Server
7. Client/Server Architecture
8. User friendly GUI
9. Real-time graphics
10. Integrated Video
11. Integrated Real-Time Time Space Diagram
12. Upload/Download data to field controller
13. Automated detector data storage
14. Tight integration with Transit Priority System

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

100 S. Main St.
Suite 900
Los Angeles, CA 90012
Phone: 213-972-5036
Fax: 213-972-5079
E-mail: gmurillo@dot.lacity.org



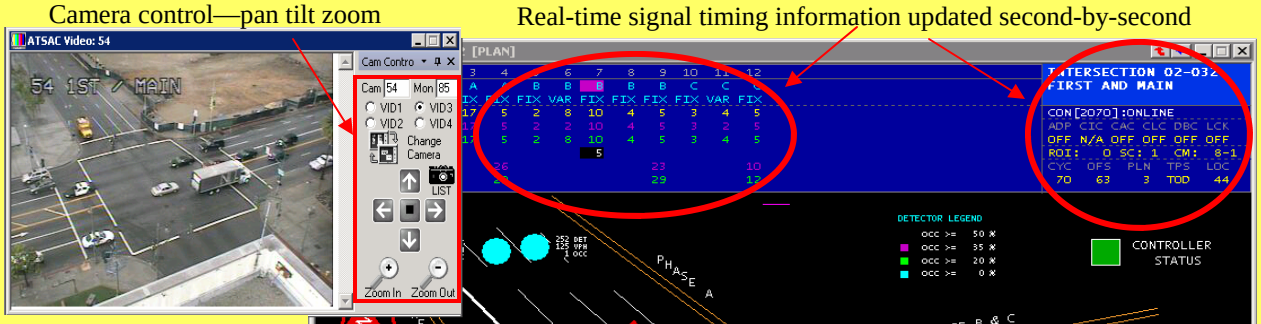
The Adaptive Traffic Control System (ATCS) is a personal computer based traffic signal control program which provides fully automated traffic responsive signal control based on prevailing real-time traffic conditions. ATCS automatically adjusts all three critical components of traffic signal timing (cycle, offset, and phase split) in response to current traffic demands. Any long-term traffic pattern changes and short-term variations of traffic conditions are automatically accommodated by ATCS. The results are fewer stops and less delay for motorists, along with improved traffic signal coordination throughout the traffic network.

ATCS was fully developed by City of Los Angeles Transportation Engineers with over 50 years cumulative traffic operations experience. ATCS currently manages traffic in over 3000 intersections in the City of Los Angeles.

LADOT

Camera control—pan tilt zoom

Real-time signal timing information updated second-by-second



Integrated streaming video

Real-time detector data information

Real-time signal color indication

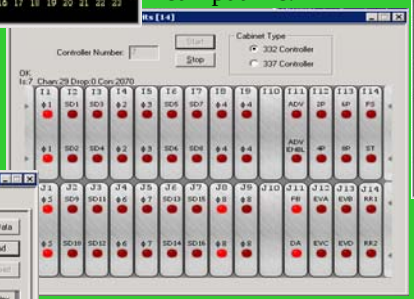
Real-time integrated representational dynamic graphics windows

Cycle length history graph—1 week's historical cycles can be recalled.

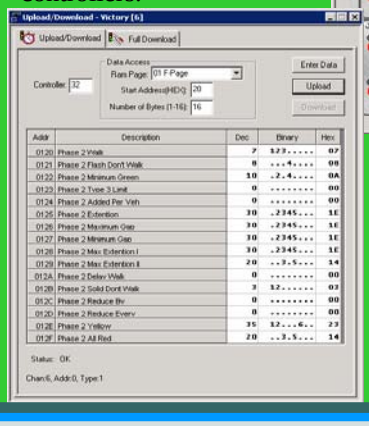
Green line is current day cycle graph.

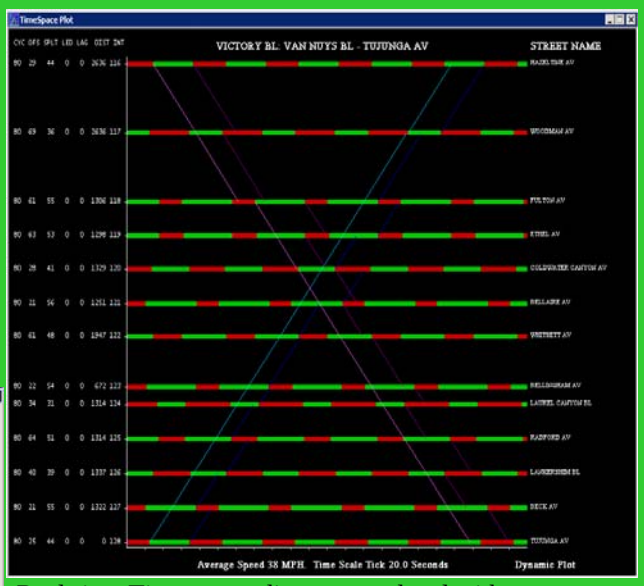
Red line is last week's cycle graph.

Uses upload/download to remotely view cabinet input file.



Upload/Download data in real-time directly to field controllers.





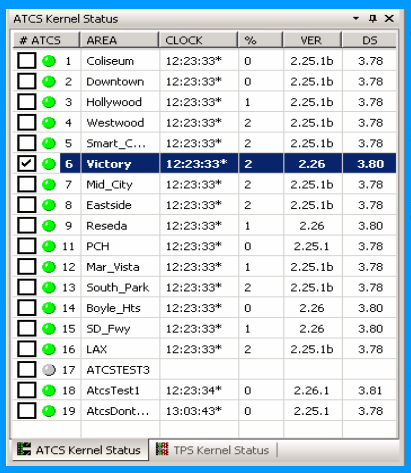
Real-time Time-space diagrams updated with current signal timing. Static Time-space diagrams can be used to design signal timing.

Real-time Section data information shows Adaptive & CAC timing information.

SECT	CTRL I/S	SC CYC	SC TMR	CYC LCK	CYC CNT	PST 3 DMD	PST 2 DMD	PST 1 DMD	PST 0 DMD	DMD SLP	PRED	A1	A2	A3	CAC ON	CAC LINK #	CAC Pratio %	CAC Thr %	CAC DIR	SD	DMD FS	MIN CYC	MAX CYC	SC
13	124	80	10	0	2	77	76	75	75	-1	74	4.90	0.60	0.33	1	7124	1.72	90	2-EW	2.00	0	60	120	13

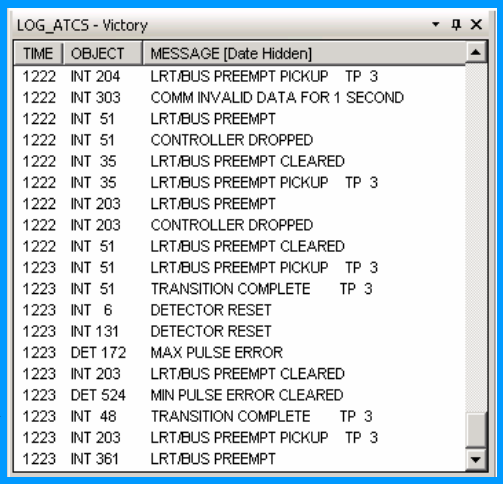
Displays past 4 cycle demands and the predicted cycle length.

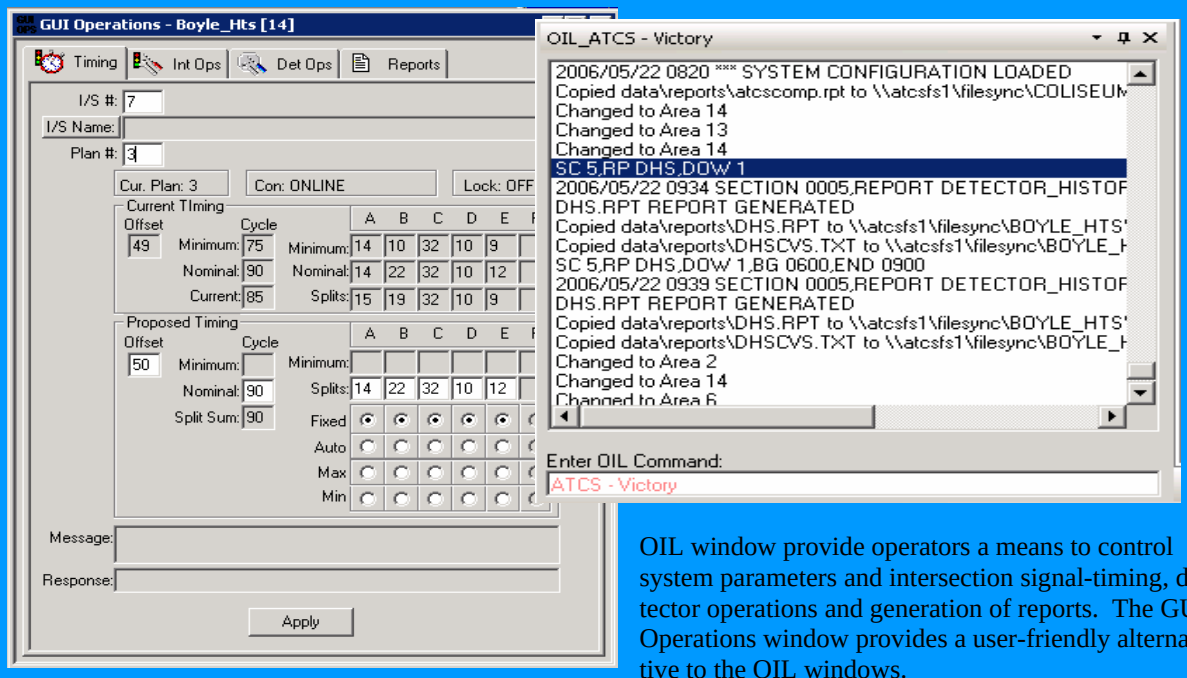
Displays CAC information & shows the direction of coordinated signal timing. The timing shown in the Time-space was calculated using CAC.



The Kernel Status Window displays the current operational status of the ATCS main task. This window controls access of multiple machines using the check box on the left.

The Log displays all system messages from the area checked in the ATCS Kernel Status Window. In a busy system this window can scroll very quickly. All messages are stored in a file for later retrieval in the System Log Report.





OIL window provide operators a means to control system parameters and intersection signal-timing, detector operations and generation of reports. The GUI Operations window provides a user-friendly alternative to the OIL windows.

ATCS Client Requirements

- Pentium 4 2.4Ghz or faster (Hyper Threading On)
- 1 GB RAM
- High Performance Video Card
  - (Use only 16 bit color at 1600x1200)
  - Dual Monitor output highly recommended
    - (NVidia Quadro series)
- 2+ Monitor with resolution capable of 1600x1200
  - (2 monitors recommended with thin Bezel)
  - If monitor resolution is less than 1600x1200, it is advisable to use more than two monitors.
- Standard Keyboard and Optical Mouse
- 60 GB hard drive

ATCS Kernel Requirements

- Pentium 4 2.4Ghz or faster (XEON Preferred)
- 1 GB RAM
- 60 GB Hard Drive
- Standard Keyboard and Optical Mouse
- Gigabit Network Interface Card
- Windows 2000 Server or XP Professional at Service Pack 1
- Ardence RTX Real-time Extension for Windows
- Comtrol RocketPort Device (1 per 32 channel/128 I/S)

Data Server Requirements

- Pentium 4 2.4Ghz or faster (XEON Preferred)
- Windows 2000 Server /Windows 2003 Server
- 2 GB RAM; 80 GB Hard Drive

ATCS Architecture Diagram