SEPAC Traffic Controller Software

Manage your intersections effectively with Yunex Traffic Controller Software

YUNEX TRAFFIC

The mobility revolution is ongoing, and cities need to react

It is time for smart mobility infrastructure, more CO_2 reduction, and safer, more livable cities. We are meeting our responsibility with the most comprehensive end-to-end portfolio of traffic management solutions on the market.

SEPAC offers exciting state-of-the-art traffic control features, including support for connected vehicles, priority for multimodal transportation and the latest peer-to-peer communications technology.

At a glance

Yunex Traffic's SEPAC traffic control software is user-friendly, accommodating a large variety of traffic control requirements by providing extensive configuration flexibility and full compatibility with Yunex Traffic M60 and Caltrans 2070 style traffic controllers. The principal supported standards are ATC 5201 v06, NEMA TS 2-2016, TEES 2009 w/ Errata 1 and 2, NTCIP 1202 v02.

User-friendly, 16-line menu driven software with parameters viewable from menu screens.

Logically laid out keysets with simple setup and startup using standard traffic nomenclature throughout the system.

Support for Vehicle-to-infrastructure (V2I) Signal Phase and Timing (SPaT) data for equipped connected vehicles.

Rich sets of logging, diagnostics and reporting capabilities available for troubleshooting and data analysis.

Peer-to-peer communications, linking multiple intersections to create a local adaptive green wave that enhances traffic flow.

Ability to export/import intersection configuration and remotely upload software using the Yunex Traffic TACTICS™ Advanced Traffic Management System.

The latest peer-to-peer traffic communications technology

Engineers can use the peer-to-peer communications module of SEPAC and existing on-street detection to identify platoons of vehicles traveling through a network of interconnected signalized intersections. Combine this with industry-leading priority routines within SEPAC, and the identified platoon can be prioritized by applying phase reductions or green time extensions to generate a green wave for the platoon to travel through multiple intersections.

Traffic engineers can improve traffic flow, increase efficiency, and reduce congestion by removing unnecessary vehicle braking or acceleration with the powerful tools available within SEPAC.

Traffic priority to encourage multimodal transportation

Giving high priority to public transportation without interrupting the general traffic flow has been a major challenge for conventional traffic control software in the past. The Yunex Traffic SEPAC software has a powerful traffic signal priority mechanism that enables mobility, safety and promotes a healthier environment to improve the quality of life in cities by enhancing the performance of traffic signal control for a number of transportation channels such as Light Rail Transit (LRT) and Bus Rapid Transit (BRT) with minimal impact on pedestrian and vehicle traffic.

Modes of operation

SEPAC's traffic capabilities include five modes of operation that allow for Time of Day (TOD) operations, week plans, time of year or holiday plans which include coordination, free and flash functions.
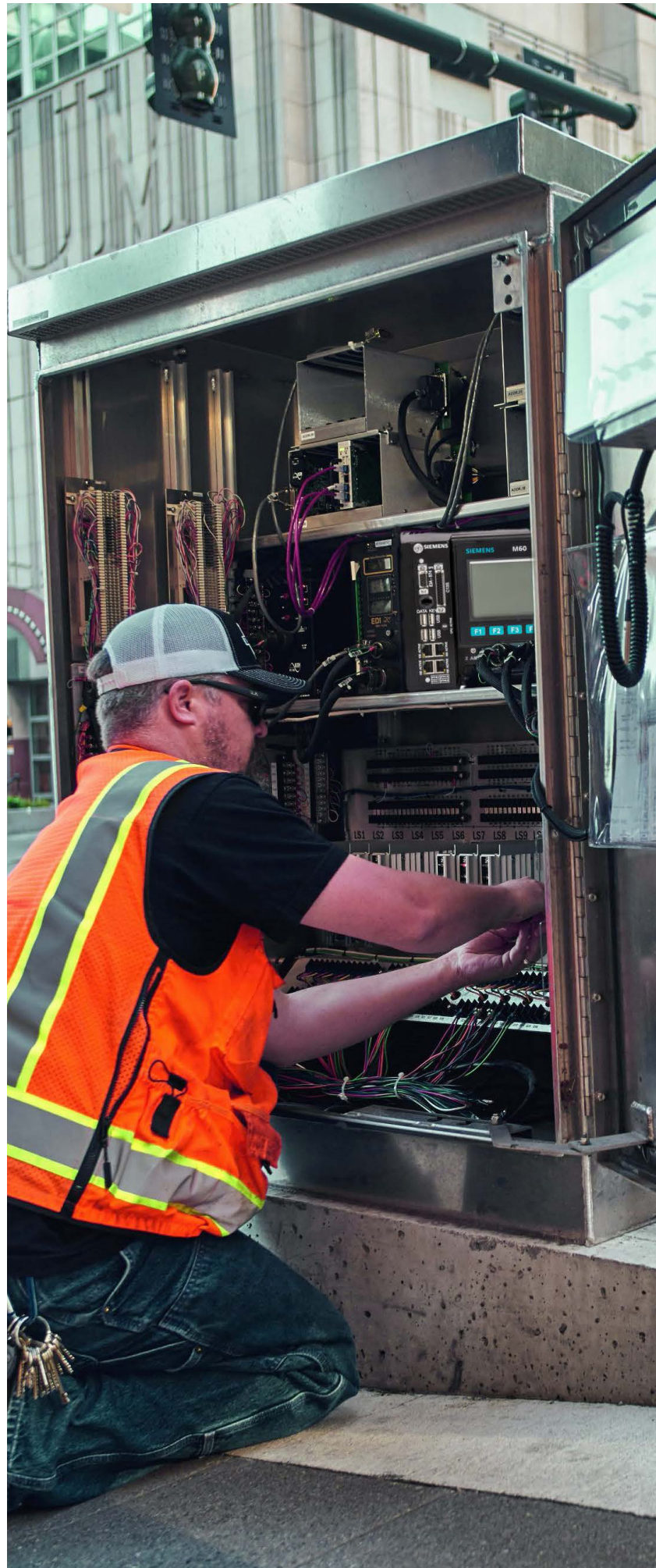
Available SEPAC modes

Local

SEPAC can be controlled manually or by time-of-day to run local coordination patterns, including FREE and FLASH.

The time-of-day clock may be kept in sync via traditional linesync or via GPS.

Master Controlled

SEPAC can function as a Local in a closed loop system with a SEMARC Master.

System

SEPAC has the ability to communicate with the Yunex Traffic *TACTICS* system for central management and control of intersections.

Adaptive

SEPAC can be integrated to SCOOT adaptive traffic control systems, helping to manage unforeseen traffic conditions and incidents with truly adaptive solutions.

It also supports powerful peer-to-peer functions for local adaptive solutions.

SEPAC supports InDOT 2020 SPM Events including:

- TSP in-check vehicle
- Preemption Force Off
- Advance Warning Sign On

... and more!

Modes of operation

- 16 vehicle phases
- 16 pedestrian phases
- 4 phase timing banks
- 4 timing rings
- 16 sequences
- 16 overlaps

Coordination

- 7 modes of coordination
- Locally based traffic responsive routines
- 255 unique signal timing patterns (including FREE and FLASH)
- 255 actions for mapping patterns
- 255 actions to day plans maps of 15 schedule times each
- 255 day plan to schedules maps
- 16 special function maps: 8 global, 8 local
- 16 phase function maps
- 3 diagnostic auxiliary functions

Detection

- 64 vehicle detectors
- 8 pedestrian detectors[1]
- 8 system detectors[1]
- Interface for Sensys Network's Ethernet Access Points for magnetometers
- Interface to Iteris Vantage Vector™ video and radar detectors
- Interface to traffic priority detectors such as Opticom's GTT, EMTRAC and E-Views

1 - 80 total detectors defaulted to listed configuration, but can be programmed as different types if necessary

Communications and Interfaces

- Supports SCOOT via Yunex Traffic SCOOT Communication Server, or via SCOOT Direct Outstation over Ethernet
- IP, serial and FSK communications to *TACTICS*

- IP standard on m60 and 2070 series controllers with 2070-1C module
- Peer-to-peer communications
- Dual support of ECOM and NTCIP communications within a single software instance
- USB memory sticks and Datakey interfaces

Peer-to-peer

- 16 IP configured peer addresses
- 32 Peer function assignments
- 34 source functions from connected peers
- 18 input functions for storing peer information

Pre-emption

- 12 pre-empts
- Return to coordination after pre-empt
- Safe flashing yellow arrow operation with pre-empt eliminating yellow trap conditions

Priority

- 12 priority routines for buses and light rail
- 4 priority banks with unique timing
- Allows for:
  - 19 vehicles tracked simultaneously
  - Tracks vehicles at any distance from intersection using up to 6 inbound detectors and one exit detector
- Adjusts splits, skips phases when necessary, and adjusts lead/lag in order to make the transitions between normal operation and priority service more fluid
- NTCIP 1211 Coordinator functionality

- Allows for seamless operation between transit and vehicle traffic coordination

Miscellaneous

- 4 system data banks for traffic responsive data
- Bicycle minimum green and passage timing
- Advanced and delayed WALK operations
- Advance warning flasher functions
- 16 SPaT IP addresses for Vehicle-to-Infrastructure operations
- Logging and diagnostics, including cycling, coordination, pre-emption, detection, outputs, alarms and communications information
- Anti-backup (yellow trap avoidance)
- Password protection
- Collision avoidance routines (Red Protect)
- External back-up facilities using USB or Datakey for use with *TACTICS* 5
- Help screens
- Illinois Rail Road security available
- International timing
- Extensive reporting capabilities

Hardware

- Linux operating system (Linux Kernel v4.4)
- Meets NEMA or Caltrans specifications
- Meets NTCIP specifications for traffic signal control
- Supported cabinet types include: NEMA TS 1, TS 2-Type 1 and TS 2-Type 2; Caltrans 332X; ATC (rack and shelf mount), ITS and CBD

Let's shape the future of mobility together!

Yunex, LLC
9225 Bee Cave Rd.
Building B, Suite 201
Austin, TX 78733
us.yunextraffic.com

Yunex Traffic is a global leader in the field of intelligent traffic systems, offering the widest end-to-end portfolio of solutions for adaptive traffic control and management, highway and tunnel automation, as well as smart solutions for V2X and road user charging tolling. Yunex Traffic has 3100 employees from 58 nations and is active in over 40 countries worldwide. Its intelligent mobility solutions are currently being used in major cities across the world, including Dubai, London, Berlin, Bogota, and Miami. Yunex Traffic has successfully concentrated its efforts on mastering technologies in the three segments of hardware, software, and service, and is subsequently the only supplier who is capable of meeting all major regional standards in Europe, UK, Asia and America. Further information is available at us.yunextraffic.com.