

TACTICS™

Advanced Transportation Management System

SIEMENS

The Art of Traffic Control

Features and benefits of the TACTICS™ suite of traffic management solutions.



Central
Traffic
Management
Software

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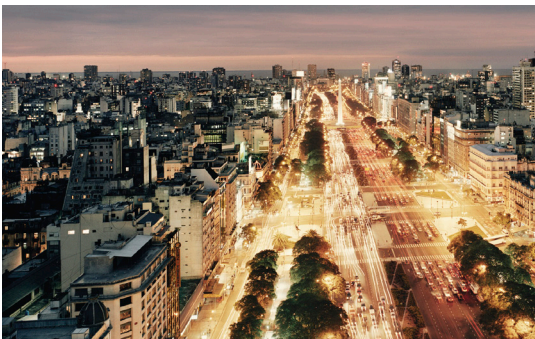
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Mobility: the success factor of the urban age.

The dynamics of the global economy are determined by large conurbations. Global competition is becoming an issue of inter-city competition and, within this context, mobility is a decisive key to guaranteeing success. Transportation systems first and foremost determine the attractiveness of a metropolis.



An urbanized global population.

Migration into cities, high birth rates and increasing life expectancy combine to form a worldwide trend towards rising urbanization. Since 2007, over 50% of the world's population has been living in urban agglomerations. This figure is set to rise 70% by 2030. An enormous challenge for both the economy and the environment.

Transport routes as lifelines. Today, mobility is one of the key strategies for survival. On the one hand, both

workforce and commodities have to be transported to where they are needed. On the other hand, people measure their quality of life in terms of good mobility.

With static infrastructure our solutions cannot rely on the ability to build more roads. Rather, we must innovate to do more with less: working smarter to solve the challenges of traffic questions today and tomorrow.

Unrestricted mobility is the greatest challenge for our society. Therefore, with its "Complete mobility" concept, Siemens creates networked, efficient and environmentally friendly transport and logistics solutions.

TACTICS is a modular, full-featured traffic control system that complies with industry standards to deliver a

reliable, powerful and easy to use traffic management system. TACTICS is designed to grow with you, scaling to meet your needs.

Designed around making traffic management and control better than ever before, TACTICS combines the features you demand with an attractive, customizable user interface to offer unparalleled traffic management capabilities.

Some of the key features for TACTICS are: easier to use enhanced graphics, customized reporting, advanced engineering tools, enhanced once-per-second communications, faster start-up and operation, expanded NTCIP operations, transit signal priority, light rail preemption and multilingual support. TACTICS offers all the modes of traffic control you have come to



Your city, only smarter.

The implementation of transportation management systems is not only a question of finance and what is technically feasible. In cities of the future, success particularly depends on optimum coordination and sophisticated networking.

expect from central systems, and more: time of day, time-based, manual, flash, preemptive/priority, and traffic responsive. And, TACTICS continues the Siemens practice of setting the standard in traffic responsive algorithms.

The TACTICS user interface is customizable, allowing either a standard browser style system guide (similar to Internet Explorer) or a user definable map image to display upon startup. If a start-up map is defined, the system opens into the monitoring mode, showing all devices configured on the map. The map displayed on startup can be altered, replaced, or removed at any time. All system operations, devices, reports, and data displays are accessible from both the system guide and map displays

creating ease of navigation from either selection.

The TACTICS scalable solution is designed to fit your current needs and grow as you grow. TACTICS is available in four editions with optional features that can be added to suit your current needs with the option to upgrade as situations change. TACTICS packages available include TACTICS View for basic upload and download operations, TACTICS Marc supporting closed-loop applications, TACTICS Central offering all the power of an Enterprise system in a smaller package, and the full scope of TACTICS Enterprise.

Our definition of partnership. For us, a project is not complete until the customer is satisfied with the results. When it comes to procurement and the training of qualified staff,

we support our customers so that even the most complex systems run smoothly. Why not opt for an experienced partner at your side who both thinks holistically and acts specifically?

With TACTICS solutions into the 21st century

TACTICS Advanced Transportation Management System prepares the operator for the growing challenges of urbanization. Ultimately, the success balance is equivalent to:

- increased quality of life for people
- safety for road passengers
- environmental sustainability

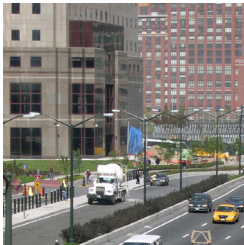
Everything from a single source. All of one piece.

No company delivers a holistic mobility concept overnight. At Siemens, know-how and international strength have continuously grown over the last 160 years. With its complete traffic management solutions, Siemens ensures that integrated transportation systems are implemented in a model way.



TACTICS View

Upload and Download utility for editing local controller databases from a laptop utility. Ideal for consulting and engineering tasks.



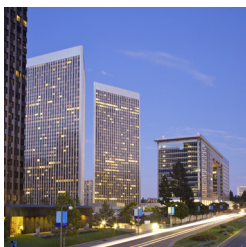
TACTICS Marc

Closed-loop application offering support for field masters running SEMARC software. Limited feature support for areas that have limited need for advanced traffic control features.



TACTICS Central

All of the powerful features of a Enterprise system application in a down-sized package. Ideal for smaller cities or areas requiring full-feature advantages with the option to grow in the future.



TACTICS Enterprise

Advanced traffic management features and expanded support offering the full capabilities of a central traffic system management.

Your size, your choice.

TACTICS scalable solution allows cities to configure a system to suit their needs for today and tomorrow.

TACTICS is available in a series of four separate option packages that can be tailored to fit the needs of your city. Packages are designed to be scalable to the next level allowing the system to grow as your needs grow.

TACTICS View

TACTICS View is designed for use on notebook computers and provides upload/download capabilities for a single controller at a time.

Designed as an upload/download utility to manage intersection timing data and controller database editing, View is an ideal solution for consultants and engineers supporting larger TACTICS systems.

Controller database editing features are identical to the controller database editing features in Marc, Central and Enterprise systems allowing for the intersection timing data to be transferred to or from a larger TACTICS system.

TACTICS Marc

TACTICS Marc is the closed-loop offering within the TACTICS family. Support for field masters utilizing SEMARC firmware allows for the system to connect with masters on the street for uploading and downloading of data as well as simple analysis features and map displays.

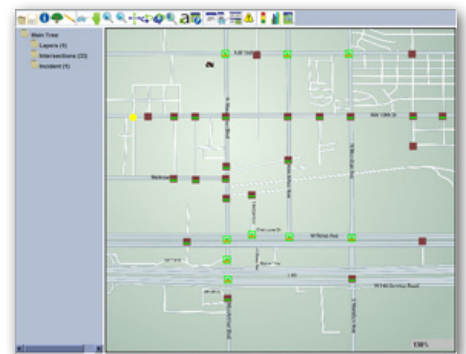
TACTICS Central

A smaller system doesn't always mean limited control or feature options. TACTICS Central is designed for the city that may only need to control a limited number of intersections but still has need for some of the more robust feature sets previously only available in larger central systems.

TACTICS Central is designed to scale up to a full Enterprise system making a seamless transition when the city or municipality needs change.

TACTICS Enterprise

TACTICS Enterprise offers all of the signal control and traffic management functionality of the other TACTICS systems as well as offering an expanded standard and optional feature set available.



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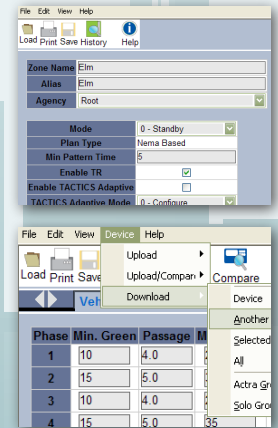
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Expanded feature support puts more of the city at your reach.

Building upon the proven features of ACTRA®, TACTICS offers a rich feature set designed to put more of the city at your reach. With a user-customizable interface, quick access commands, light rail support and a Favorites list available in multiple option packages TACTICS is the ideal choice for central system traffic management.



User Interface Customization

Each user can customize the user interface to a format that works best for them. Users who have trouble with certain colors or with smaller font sizes can adjust the user interface so that they can easily see the data displayed. By allowing these customizations, TACTICS provides a better user experience and reduces user fatigue.

Status Polling

TACTICS provides additional status reports for Intersection status, System Detector status, active alarms, Quick Response, Ramp Meter status and Port Server status. By reporting these additional status items, TACTICS provides the user with a more detailed view of just how their system is operating. This detailed view allows the user to quickly identify potential issues and implement a response. The detailed status is not limited to just the intersections under TACTICS control, but also includes status of the system as a whole.

Upload/Download

TACTICS provides the ability for the user to compare different controllers as well as upload or download from one controller to another. Comparing

one controller to another controller allows the user to quickly identify differences in controllers that use similar timing configurations. The end result is that the user spends less time configuring controllers.

Uploading and downloading from one controller to another controller or to a group of controllers reduces the time users spend configuring their controllers. Less time is spent on redundant data entry.

Light Rail Transit Support

TACTICS Light Rail Transit Support can efficiently provide priority to light rail while minimizing the negative impact on the driving public. The result is that both Light Rail Transit passengers and vehicle drivers get to their destinations efficiently and safely.

User Defined Groups

Users can specify to logically group controllers independent of their signal control groupings. Users can elect to group controllers according to arterial layout or communications channel without affecting operational group settings.

Favorites

System users typically utilize the same screens and reports on a day-to-day basis. By adding these

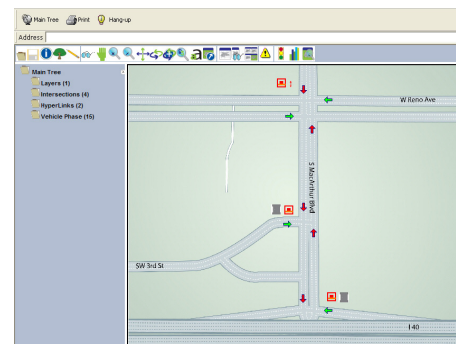
items to their Favorites List users can quickly get to the information needed to perform job duties more efficiently by reducing the number of mouse clicks needed to access important information.

Quick Commands

Similar to the Favorites List, Quick Commands provide access to various system status screens with a minimum number of mouse clicks.

History Parameter Reconstruction

Changes made to the controller timing database and the system configuration are logged and time-stamped in the system database. If a user makes a change resulting in an undesirable effect, the user can easily rollback to the previous configuration.



Siemens TACTICS Packages Feature Support

	View	Marc	Central	Enterprise
Central / Workstation/ Communication Servers	-	x	x	x
Installation package	x	x	x	x
Multiple-Language Support	o	o	o	o
Password Protected Access	x	x	x	x
Multi-User controller access	-	x	x	x
Restrict 'operations' level	-	x	x	x
Restrict 'device access' level	-	x	x	x
Agency and Jurisdictional restrictions	-	x	x	x
Field operations	-	-	x	x
Failed Intersection List	-	o	x	x
Zone/ Group Broadcasts	-	o	x	x
Intersection Status	-	x	x	x
System Detector Status	-	x	x	x
Active Alarms Status	-	x	x	x
Quick Response Status	-	o	o	x
Ramp Meter Status	-	-	x	x
Port Server Status	-	x	x	x
Port Server Client Status	-	x	x	x
Traffic Responsive Status	-	-	x	x
Controller Status	x	x	x	x
Second per Second Monitoring	-	-	x	x
Second per Second Signal Control	-	-	x	x
Controller Database Upload and Download	x	x	x	x
Upload and download from one controller to another	-	-	x	x
Compare controller database to Central database	-	x	x	x
Display list of all differences between Central and field device	-	x	x	x
MARC Master Support	-	x	x	x
Virtual ports for third party applications support	-	o	o	o
ECOM Support	x	x	x	x
SEPAC NTCIP Support	x	x	x	x
Serial Connection Support	x	x	x	x
IP Connection Support	x	x	x	x
Dial-up support	x	x	x	x

	View	Marc	Central	Enterprise
Multiple Communication Servers	-	-	x	x
Light Rail Transit support	-	x	x	x
Support for dynamic objects	-	x	x	x
Poll NTCIP controllers for OIDs supported	-	x	x	x
Logical grouping of controllers independent of signal control	-	-	x	x
Favorites Lists	-	x	x	x
Quick Command access buttons for select status screens	-	x	x	x
History (Parameter Reconstruction)	-	x	x	x
Standard and Custom Reports	-	x	x	x
Synchro Support	-	x	x	x
Time Space Diagrams	-	o	x	x
Split Monitoring	-	o	x	x
DMS Sign Support	-	-	o	o
Ramp Meter Support	-	-	x	x
CCTV Support	-	-	o	o
Chandump Logging	x	x	x	x
Configurable Logging Levels	x	x	x	x
System Maps	-	x	x	x
Intersection Maps	-	x	x	x
MARC Maps	-	x	x	x
Multiple Intersection Maps	-	x	x	x
Sub-Maps	-	x	x	x
Symbol Display (hide/show) levels	-	x	x	x
Custom Map Labels	-	x	x	x
Map recording and playback	-	-	x	x
ECOM, NTCIP and EPIC map support	-	x	x	x
Incidents	-	-	o	o
Quick Response	-	o	o	x
Traffic Responsive	-	x	x	x
Time of day	-	x	x	x
Center - to - Center	-	-	o	o
Hyperlinks	-	x	x	x
SCOOT Interface	-	-	o	o

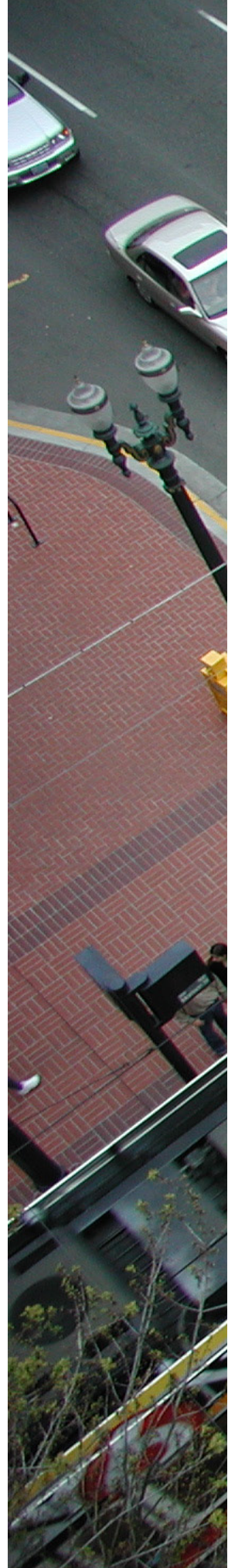
Revised January 2012

- not available
x standard feature
o optional feature

Siemens provides leading-edge traffic technology for the fast-paced world of Intelligent Transportation Systems. Whether providing local controllers, video detectors, controller firmware, central systems, system analysis, design, integration, or consulting services, Siemens brings innovative and reliable solutions to customers. Siemens has a long history of quality and innovation in transportation control and management.

Coupled with proven products and development experience, as well as highly regarded consulting services, we form the world's foremost traffic control and transportation management company. Siemens is very active in the development

of new industry standards, and we have helped to form positive industry standards and develop new "state-of-the-art" products, including the NTCIP C2C protocol and the Advanced Traffic Controller Specification.



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