

ITS Platform





LA SEMAFORICA srl
TECSEN
REV. March 2016

In order to offer the best possible service, La Semaforica and Tecsen have the right to modify at any moment and without any warning the features of the products described in this document.
This document has the only purpose of illustrating the product.
If you need detailed technical data, please do not hesitate to contact us.

TMacs

Total Management Advanced Control System



TMacs is an ITS open platform and is an essential and powerful tool for the control and traffic management. The system configuration is fully customizable and TMacs offers maximum performance in every application linked Infomobility.

TMacs was created by the only Italian company that works continuously for more than 70 years in the traffic management sector. The system is therefore the final result of all the knowledge accumulated about the control and management of traffic lights junctions and the creation of some of the most important control centers of Italy. The results obtained grown-up TMacs as one of the most modern and flexible systems available today.

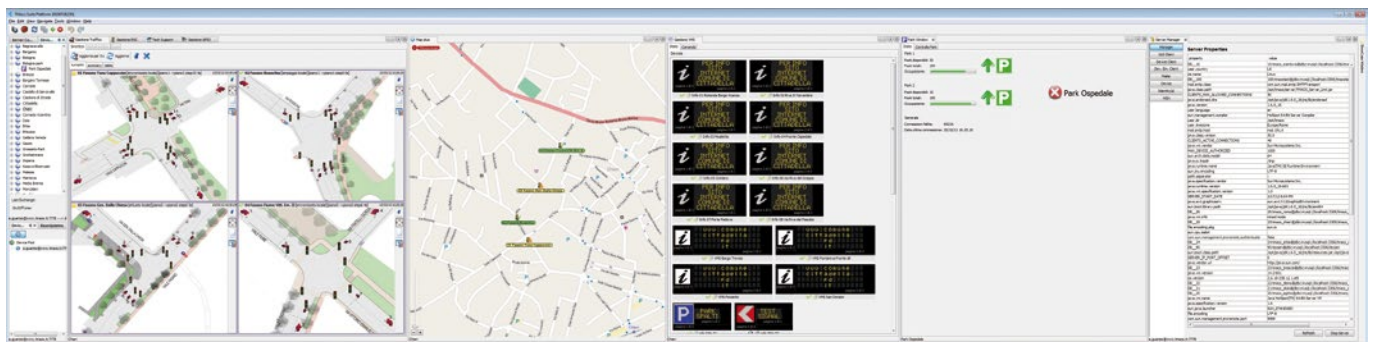
TMacs can operate on networks of any complexity, adapts the control strategies to optimize the performance. Using the recorded data, instant events and predictable events, the system can continuously adapt the traffic demand according to control strategy.

TMacs is able to communicate with the field devices with any existing IP network, wired or wireless. This means that the server's location is no longer a problem and allows remote in-

stallation and virtualization. Continuous communication with field devices allows a diagnostic check, with immediate alarm in case of malfunction. In addition, the user can easily access all the recorded data of each field device configuration, traffic data, alarms and so on.

The open architecture of TMacs lets you control multiple devices (traffic controllers, sensors, control devices for public lighting, variable message signs, weather stations, car parks, etc.) and offers local authorities the opportunity to delegate the management and the maintenance of the various subsystems.

The interaction between the user and the system is done on the IP protocol; you can access the control center from anywhere in the world via an Internet connection. By careful management of access levels to the system, TMacs allows every type of user (system integrators, planners, traffic engineers, maintenance workers) to have only the data they need, in order to maximize efficiency and safety.



SMacs Web & Mobile

Smart city system



SMacs is the ITS Web Platform for the management of centralized systems with TMacs Platform and SMacs. The focus of SMacs is to display all data obtained from centralized devices with TMacs Software on a web page, which is available from their web pc. SMacs allows you to control and interact with the installations of the platform, without the need to install software or dedicated applications.

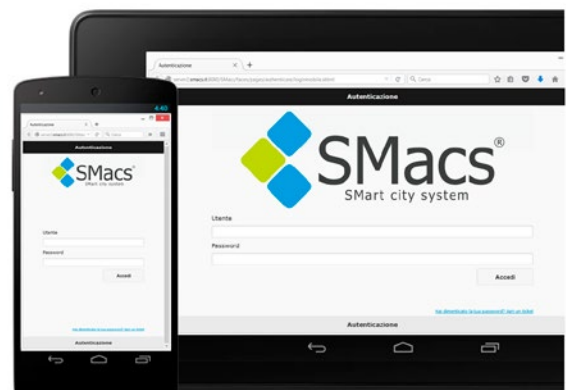
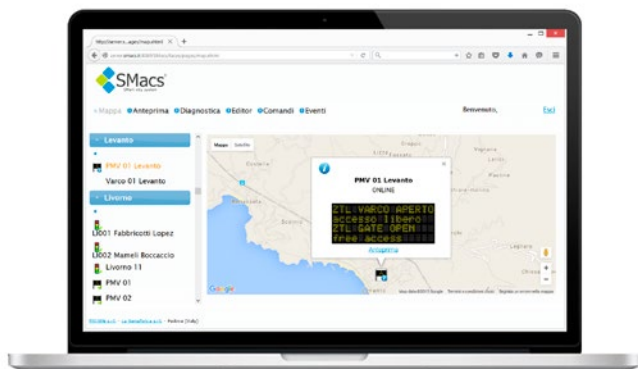
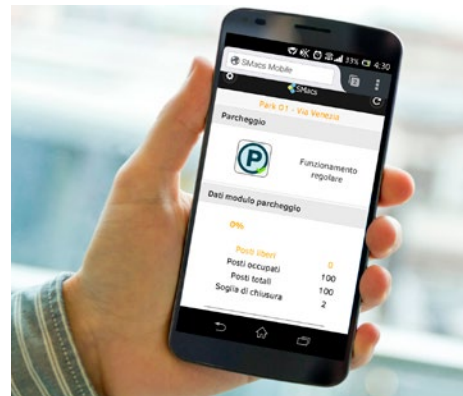
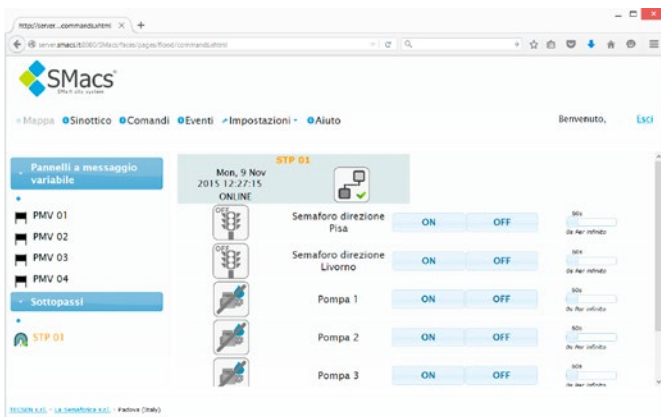
SMacs is the ideal solution for the constant control of its centralized systems. In addition to monitoring, you can implement controls to change the functionality of the system, display the events to ensure maximum traceability of the transactions executed.



SMacs Mobile is the mobile version for smartphones and tablets. With the Mobile module you can access your control systems wherever you are via iPhone, I Pad, Android, with a simple click and with the login credentials you can control and manage the centralized systems with TMacs:

- No App to be installed;
- User-friendly;
- Fundamental in case of emergency.

SMacs Mobile has been studied and designed to be straightforward, easy to understand and to allow you to take immediate action in any situation. SMacs Mobile stems from law enforcement, the maintenance technicians on the system have to step in and are on the road.



TMACS AND SMACS STRUCTURE

The ITS Platforms TMacs and SMacs include modules with specific functions. The modules interact with different types of systems on the road such as traffic lights, priority systems for public transport systems to the arrival prediction, variable message signs, parking lots, restricted areas gates, weather stations, environmental monitoring stations and underpasses.

All the modules can interact with each other creating a comprehensive ITS solution that can meet all the requirements of an integrated system to improve the mobility and safety of citizens.

All road devices by communication unit continually exchange data with the server TMacs Web Server.

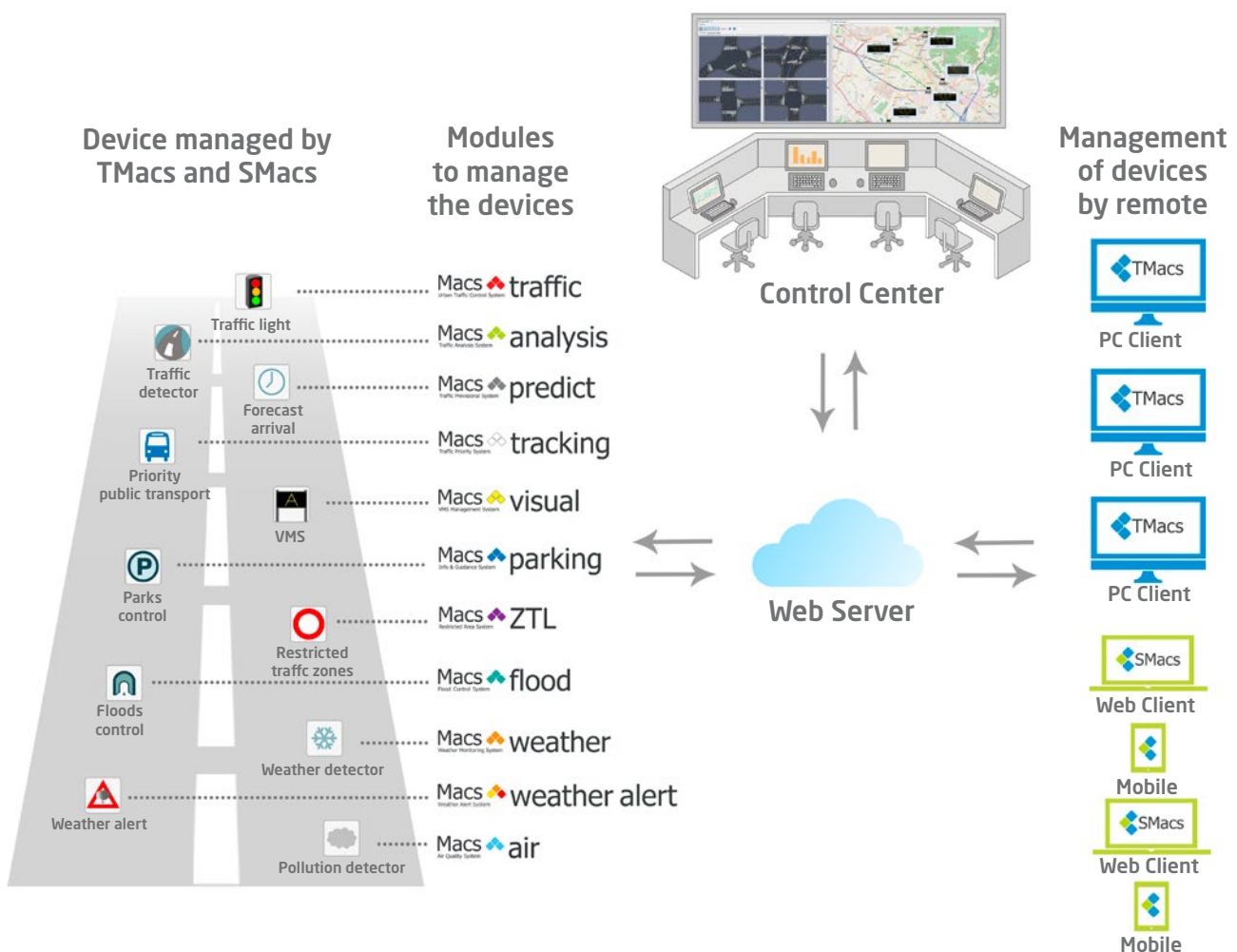
In this way all the systems are centralized, or connected to a central computer system that allows its use and management.

Access to the software is possible by entering access credentials that allow the plant management from the Client or Control Room PC version TMacs, the Web Client version SMacs and the Mobile version by Mobile SMacs.

THE ADVANTAGES OF THE PLATFORM

The centralization of the devices with TMacs and SMacs Platform enables:

- the management, the monitoring and the control of the devices;
- the configuration of alarms for the operators to respond effectively in case of problems;
- there is no limit to the number of simultaneously connected users, since the platform allows an unlimited number of accesses;
- each operator can access at any time to the platform;
- expandability and scalability of the system;
- info in real time;
- adaptability and compatibility with devices already in use;
- significant reduction of local interventions;
- constant updating of functionality and interface graphics software;
- availability of manuals on the use and potential of the Software;
- remote assistance by qualified staff through ticket opening or dedicated telephone number.



KEY FEATURES

TMacs is an ITS platform for the integrated management of traffic junctions of variable message signs, the traffic stations, weather stations, car parks, etc... The TMacs platform can run on physical or virtual hardware facilities, to private and independent server or shared on Cloud. Configurations can be: Single-server, Multiserver, Cluster/Cloud structures.

Tecnology used:	Java 8
Platforms:	Windows - Linux
Protocols:	TCP/IP
Data Base:	Standard SQL, (MySQL)
Network:	Ethernet, ADSL, Fiber optics, LAN/WAN/GPRS/UMTS/HSDPA

The whole system has been developed in Java language, and therefore compatible with the majority of computers and operating systems.

The interaction between client and server, as well as the recorded data availability, provides each parameter for the development of all strategies, manages and consider any type of request and directive, providing the exact situation before, during and after surgery of any operation.

TMacs allows configuration of various types of identity, with the ability to enable the functionality of the Software, this means that a profile can have unlimited access to a subset of the network, but not to other parts of it, or a profile can only access a certain type of devices connected to the system (such as VMS, or such as Weather).

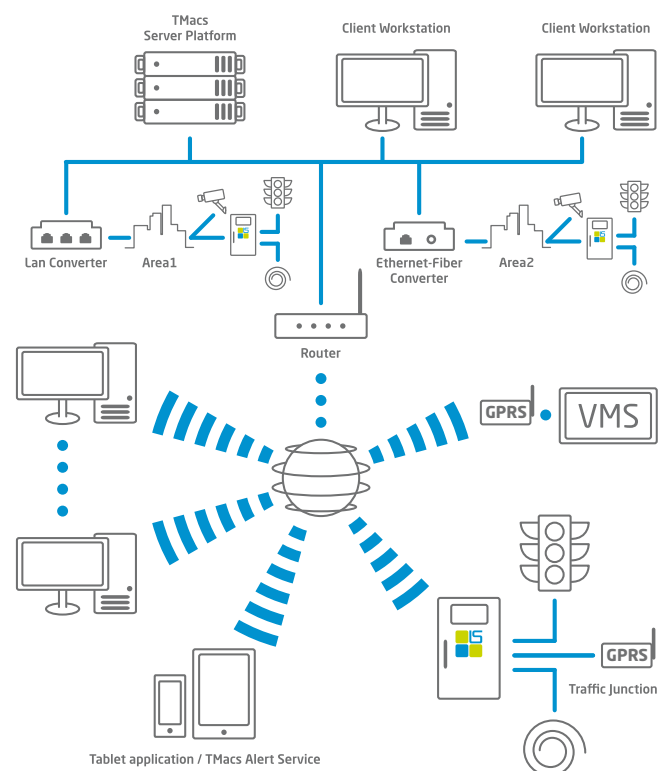
This flexibility allows a wide range of users, such as statistical data, the technicians in charge of maintenance of field equipment control consultants or traffic engineers to modify the road network management strategies.

CONNECTIVITY

TMacs communicates continuously with all remote devices under its control. In order to maintain this communication, the system can use any type of network: dedicated cables, fiber optics, internet access nodes or GPRS .

The client interacts with the server via LAN or via Internet and it allows the complete portability of the system.

The Central system manages several accesses through an authentication procedure: the level of interaction with the system changes depending on the user so as to allow each operator only the functions that is able to manage.



The central server runs two main applications:

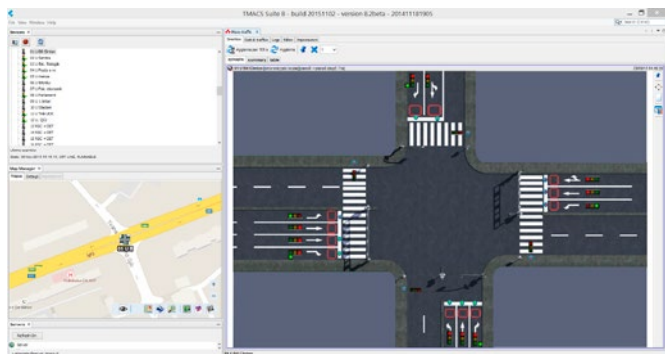
- The interface between the server and the remote devices (traffic controllers, Traffic Monitoring stations)
- The interface between Server and end user (client)

TMacs manages completely automatically all the remote devices, recording any single exchange of data. This means that any data concerning a remote device from the moment of its initial installation can be accessed at any time.

It carries out the control of the communication lines and the communication in real time to the logged users of any irregularity that can compromise the complete efficiency of the system.

Macs Traffic is the Urban Traffic Control System

Available on



SYSTEM FUNCTIONS

- Dynamic Generation. Fully adaptive logic
- Mixed Generation. Fully adaptive and/or plan selection
- Valuation and determination of saturation level
- Valuation and determination of the capacity of the infrastructure
- Models of traffic flows (Greenshield; Greenberg, parabolic, logarithmic, model of the vehicle lined up)
- Traffic stability (local and asymptotic)
- Shockwave analysis
- Models for "rolling gate" decongestion
- Estimation of Service Level LOS on 6 levels in real time
- Evaluation of Delay Time
- Determination of Delay Time
- Coordination of actuated junctions

GOALS

The TMacs® Traffic Integrated traffic control system manages mobility in urban contest and coordinates traffic flows, accommodating the needs of cars, public transportation vehicles, cyclists and pedestrians.

In particular, time lost by public transportation vehicles at signaled intersections must be kept to a minimum through fully adaptive interventions.

The must-have for an adaptive traffic management system is traffic data, and TMacs® can acquire and store them from any available technology (loops, video, ultrasound and microwave detectors). Data necessary for vehicle actuation are processed in the local controllers. All the data are in any case transmitted to the control center, where they can be used for higher

lever decisions about the management of the traffic network. The central system analyzes all the incoming data, produces a graphical visualization and sends back instructions to the traffic controllers. This intelligent traffic control technology allows a quick detection and solution of most problems that can arise on the traffic network under control.

Macs Traffic offers high performances, in congested and in predictable traffic conditions.

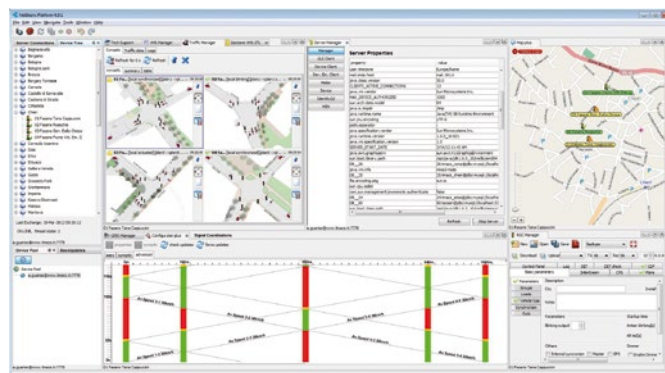
Field trials have demonstrated the following benefits:

- 25% decrease in travel times for public Transportation
- 18% decrease in travel times for private traffic
- 14% decrease in pollution emissions in urban areas.

TMACS CLIENT FEATURES

The client software allows the user to perform the following actions:

- Control of the real time condition of the network and access to stored data of any controlled device
- Access to database containing all traffic data, compare different periods, graphic processing, study of strategies and data printing
- Interaction with the local units changing for example setting or functioning mode, complete programming of traffic plans for each junction, management of messages on luminous information signs, etc.
- Maintenance operation from remote, as reboot of controllers on site, reset of possible alarms and different reconfigurations.
- Macroarea Level: it graphically represents the comprehensive view of the whole checked system, with personalization of the icons according to the devices to be controlled
- City Level: it shows the city map with the entire urban area with definition of the checked sectors



TRAFFIC CONTROL

The traffic control service takes advantage of the TMacs® configuration flexibility. It can directly connect to traffic controllers through the internet and it can instruct them to apply the best control strategy, based on the data coming from the sensors. Local authorities or System integrators that want to use the service will drastically reduce the costs of start up and maintenance, having then benefits in terms of long-lasting performances. The use of specific structures for the housing of control system assures high standards of reliability, while services of supervision, interaction and maintenance support allow the user to have a complete view and interaction with the system.

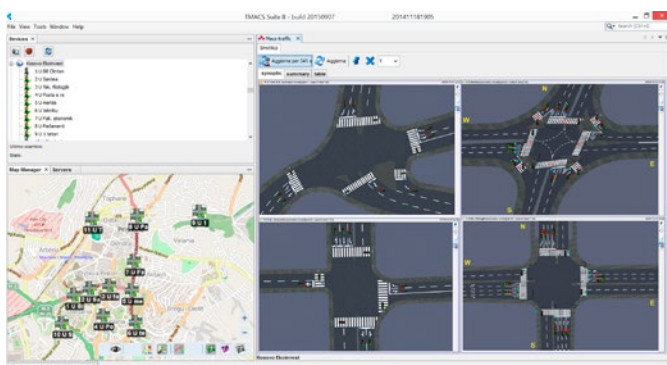
The flexibility of communication gives the possibility of using any available infrastructure, thus reducing the need of installing new ones.

The system allows to define in detail the setting of any single junction or of a network of coordinated ones. In order to facilitate the analysis of the network behavior and to test the effectiveness of the adopted management strategy, TMacs® offers calculation tools and visual representation. This allows traffic engineers to make the best use of the large amount of data collected by the system.

TMacs uses fully adaptive strategy and strategy selection of plan.

In the fully adaptive strategy they are applied concepts of dynamic optimization to minimize time lost from both the public transport is the private transport. Optimization is based on continuous monitoring of the network. The entire network is divided into coordinated intersections by means of control units that communicate continuously with the central system.

The second strategy is the selection of Shot, that provide for the activation of signal plans depending on the traffic conditions present, according to specific criteria. The plans are activated by the operator, selected by the dynamic recognition of traffic scenarios and by time.



TRAFFIC ENGINEERING

The interaction with the system for strategic purposes of management and coordination, offers 3 approach levels:

Expert coordinator: he/she has the possibility to enter each setting parameter, deciding the relative importance of each traffic flow. For each intersection he/she can set the best parameters to optimize the performances of the network. Then, in case of congestion, the expert coordinator can decide which lanes will acquire priority and which are the specific controlling parameters: pollution, whether, public transportation vehicles or other.

Advanced Coordinator: he/she enters the main configuration parameters but stops at the level of net coordination, without entering in the details of single junctions. The advanced coordinator has the possibility to shift congestion to secondary junctions in order to keep main urban areas free, until demand drops below capacity.

Standard Coordinator: he/she can interact with the Management System defining possible situations that may occur and consequently choose a temporary network plan to be transferred to each traffic controller. The standard coordinator has the possibility to operate on the choices of the System, according to localization and intensity of traffic flows.

For the traffic engineer used to working with other traffic management systems, TMacs allows you to export data in tabular format, typically MS Excel, or save and print the graphs directly from Platform.





GENERAL DESCRIPTION

Macs Analysis is the module that processes and manages traffic data obtained by the sensor unit positioned on the road for real-time traffic monitoring and historical data.

DATA AND ANALYSIS AVAILABLE

Macs Analysis allows you to view the real-time monitoring and historical data:

Real-time monitoring makes the following information available:

- the changes in daily traffic flow divided by detector (lane) and total;
- ADT [veh/d] average daily traffic;
- Number of vehicles;
- Average speed [km/h];
- 15th percentile [km/h];
- 85th percentile [km/h];
- Average flow [veh/h];
- medium density [veh/km];

Historical Analysis

Macs Analysis allows searching across multiple lanes of traffic or on multiple stations simultaneously and displays the following historical data for each detector (lane) and total:

- directional split of the lanes and total;
- Average speed [km/h];
- 15° percentile [km/h];
- 85° percentile [km/h];
- Minimum speed, maximum speed [km/h];
- Total number of vehicles;
- ADT [veh/d];

Macs Analysis allows you to view graphics relating to the temporal trend divided by detector (lane) and in total according to the chosen classification scheme:

- Temporal trend of the vehicles
- Temporal trend of the vehicular flow;
- Temporal trend of the speed;
- Temporal trend of the density;
- Distribution of vehicular types as a percentage;
- Speed frequency distribution;
- Chart of the first 200 hours;
- Typical Daily results divided per lane and the total;
- Typical weekly trend divided by lane and the total;
- Flow charts - density, speed - density, speed - density divided by lane and on all lanes;
- Free Speed [km/h];
- Critical speed [km/h];
- Critical density [veh/km];

Classification scheme of vehicles:

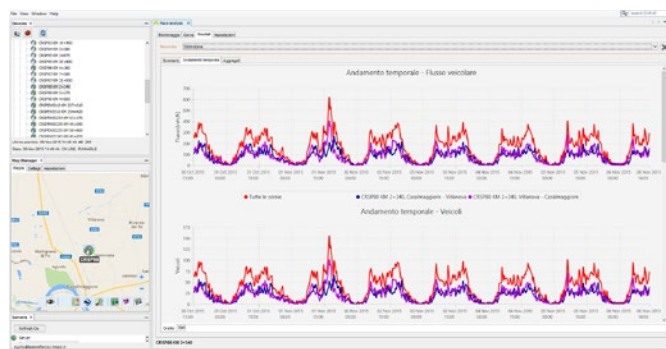
- Scheme 3+1
- Scheme 4+1
- Scheme 5+1
- Scheme 8+1
- Scheme LpSig9
- Customizable

TRAFFIC DATA MEANS:

Study the quantitative and qualitative aspects of traffic demand is a key element in the correct and optimal planning of any intervention or for the assessment of the effects.

Traffic surveys help define the analytical framework of mobility and, thanks to a continuous and constant updating, are an important element for the development's extremely and improvement of land management: this data, appropriately correlated with those obtained from other become essential information bases for programming and planning activities. Similarly, the traffic data may be used for:

- specific analyses on road safety as they contribute to the index definition of accident axes and intersections;
- environmental analysis since they allow to analyze the impact of traffic on the environment;
- planning of interventions on the road network (road maintenance, signage, underground utilities, etc.);
- event handling.



GENERAL DESCRIPTION

Macs Predict produces a forecast of traffic conditions by collecting information on journey times. Being integrated with Macs Traffic, it allows to use models forecasting traffic management so as to be able to anticipate future demand.

The system is based on data collected in real time by sensors installed on the streets, data that are compared with historical trends in order to select the best scenario.

The continuous comparison between expected and measured traffic allows to evaluate the reliability of the forecast.



MAIN FEATURES

- Diagram map showing traffic volumes
Graphical representation of the volume of traffic on a road network or a specific area of operation.

- Plan isochronous
Planimetric representation in a particular area on which are plotted the joining of the localities within the same time from a given point.

- Forecast Traffic
The qualitative and quantitative determination of future traffic on the basis of current data and presumptive criteria.

- Inbound Traffic
Incoming traffic in an area where there is the point of destination.

- Traffic leaving
Outbound traffic from a particular area in which lies the point of origin.

- Traffic in transit
Traffic that enters and exits in a given area without having either origin or destination within it.



GENERAL DESCRIPTION

Macs Tracking is a method of handling bus priority that allows buses to travel through traffic signals by prioritizing their passage to improve speed and reliability for passengers.

The System can operate in a completely autonomous mode through its own AVL (Automatic Vehicle Location), which depends on the installation of a GPS Tracking device on the vehicles. These devices send the GPS position of each vehicle in real time to Macs Tracking.

Macs Tracking can be integrated with a pre-existing AVL system, from which it receives the information on the position of the vehicles.

KEY BENEFITS

- Macs Tracking is fully integrated in the TMacs® Platform
- GPS Tracking of vehicle position and route
- Gain in commercial speed
- Time management, driving and works times
- Greater transport capacity
- Service regularity; alignment with nominal timetables.
- Reduction of pollution
- Energy-efficient
- Exact vehicle positioning
- Tracking report documentation

TRACKING BENEFITS

Automatic Vehicle Location (AVL) provides up-to-date location information for many kinds of vehicles, delivery trucks, freight trucks, service vehicles, emergency vehicles etc.

The AVL system consists of a GPS receiver on the vehicle, a communications link between the vehicle and the dispatcher, and pc-based tracking software for dispatch. The communication system is usually a GPRS network.

Macs Tracking gives important benefits:

- Check the position of the fleet in real time on a map
- Check routes, KM, driving times, and stops
- Check the traffic, with GPS locator
- Locate the nearest vehicle to the requested point
- Floating car data information
- Collect stampings start/end work
- Analyze activities duration with times recorded
- See all the daily activities

Macs Tracking communicates through Macs Traffic with the traffic signal controller and then manages the sequence of the traffic lights to assist the transit of the priority vehicle through the junction. This can be achieved by extending a green phase, skipping a stage or shortening the green phase for other traffic in order to give the bus a green signal earlier than it would otherwise have been the case.



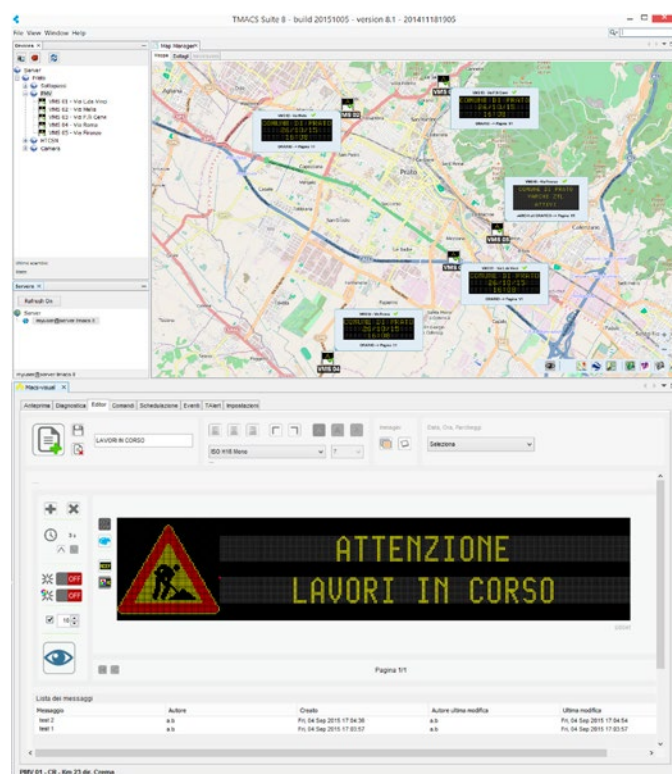
GENERAL DESCRIPTION

The Variable message signs are aimed at displaying road messages that can be created, changed, activated or deactivated by the user.

Macs-visual, one of the modules belonging to TMacs Platform, is the SW that allows you to manage, control and display of variable message signs functions. The simple, intuitive and secure form provides the user with all the tools necessary for creating and sending messages on VMS in complete autonomy.

The Macs Visual Module allows:

- preview the active message by road;
- send messages on PMV panel;
- create the scheduling of messages to be sent to VMS panel;
- request the status of each hardware component of VMS panel and the LEDs (only where available, in the presence of specific sensors);-
- set the date/time on the panel;
- send notifications to the appropriate persons in the event of failure of the panel;
- get information about the connection status.



MAIN FEATURES

Macs Visual is the traffic management system that makes traffic information on public transport and private traffic available.

The objective of Visual is to provide residents and visitors with up-to-date traffic information.

The system is operated by La Semaforica Research and Development department.

The System collects the data from a lot of different sources: Traffic data, Parking data, weather data, congestion information and sends messages to the VMS.



Visual is also responsible for controlling the information panels. However, the operators can monitor the text messages currently displayed on the panels by Visual and, depending on the current status and setting, choose to change or maintain them.

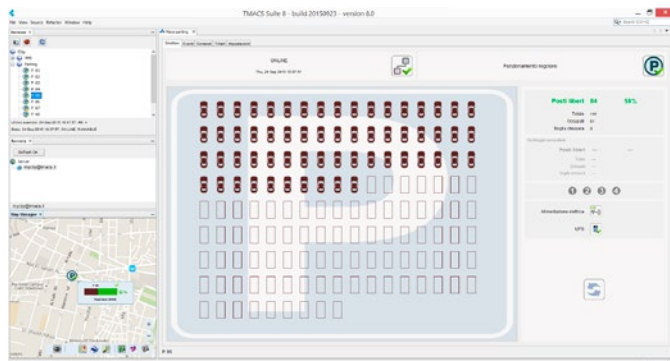
Visual allows to display in detail the status of any controlled device: real time diagnostic status with progress in time of viewed message. It shows in real time the status of each connected sensor or other device linked to the VMS.

In case of queue sensors connected to the equipment, it provides information on the traffic of that section. It allows to enter a control panel and to give orders to the message, with the same freedom of an operation on site.

If the user needs to manage information on traffic or any other information of public interest, Macs Visual is the most efficient and versatile System. Based entirely on the Internet, it uses the entire structure of the TMacs® platform to provide a service allowing instant, easy, intuitive, secure and unassailable messaging.

GENERAL DESCRIPTION

To solve city traffic congestion problems and provide suitable tools to convey correct information useful to the public, Macs Parking is an integrated system that directs users to available car parking and provides them with much-needed information. Information on traffic restrictions, air quality and free spaces in car parks can also be conveyed through this system, easily and in real time.



By sending information in a dynamic way, accumulation of traffic can be alleviated by advising drivers of alternative routes and helping them to quickly locate the free parking spaces nearest their destination. The system incorporates software and hardware technologies that exploit market standards, meaning they can be easily integrated in other systems and implemented in stages.



COMMUNICATION NETWORK

The communication network connects the central system to the local units. From a logic point of view, each local unit has to exchange data with nearby units and with the central system. The data exchange is carried out through the sending of messages, identified by their origin and destination units and type of message, on the communication network. The communication network is done by the set of connections needed to build up these logic links.

The network is based on two kinds of connections:

- Physical connections;
- Wireless connections.

These two connection typologies can be combined in any way in order to use at best the infrastructures available for the application (phone cables, ADSL/HDSL connections, fiber optics cables, GPRS modem, 3G modem). The system can manage autonomously and dynamically the access and the communication on each single local unit.



Monitoring System Restricted Traffic Zones

Available on



GENERAL DESCRIPTION

Macs ZTL control the gates of the Restricted Traffic Zone, used mainly in city centers to limit in some times the traffic to vehicles.

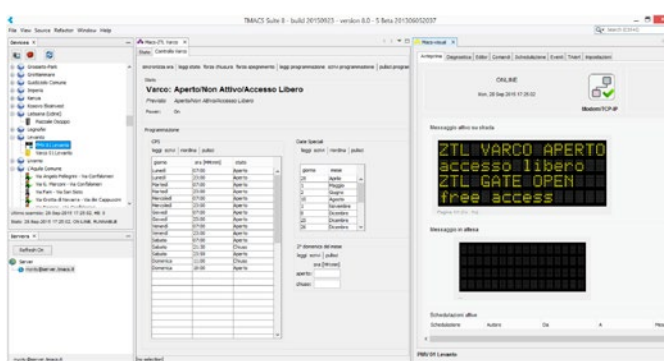
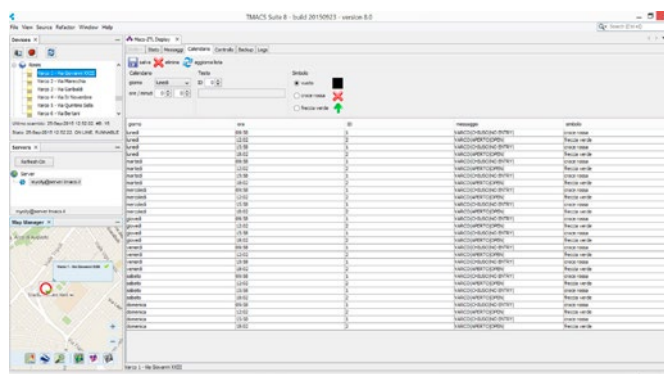
GOALS

- Fully integrated and interacting with each module of the platform TMacs
- Used with Visual Macs module for displaying messages in variable message signs
- Improvement of road management
- Optimization of resources for the maintenance of roads
- Userfriendly



BENEFITS

The completely remotely managed system allows you to change the days, the time slots of opening and closing of the gates with a single click to deliver an efficient and secure system. The software records all events with the changes of programming by users, users of the platform to ensure safety and traceability.



Macs Weather is the Weather Control System

Available on



GENERAL CHARACTERISTICS

Macs Weather allows you to monitor and record every weather information.

The system can detect and store any information for statistical purposes or to receive weather information in real time for every kind of mobility: the management of means gritter, the reduction of speed limits through Variable message signs, from the choice of traffic strategies to be applied to the simple signal of possible danger to users both on the move and about to start a trip.

GOALS

- Fully integrated and interacting with each module platform TMacs®
- Detail historic about every kind of weather conditions
- Statistical Analysis-depth
- Availability of data to third party entities
- Reduction of intervention by the operators of the road network
- Improved road safety
- Optimization of resources about maintenance of roads
- Energy efficiency

BENEFITS

The availability of meteorological data raw or processed is very important on many circumstances:

- Historical data allow processing and statistical analysis;
- The real-time data allow to obtain and issue warnings, program and control work activities, program of extraordinary measures;

All this finds application in various sectorial fields, including:

- Monitoring of road networks,
- Industry,
- Disposal of waste,
- Construction,
- Agriculture

The weather conditions also influence very much the traffic as well as the evolution of the meteorological phenomena, especially in case of severe environmental impact, such as fires, floods or accidents with toxic emissions.

For this reason the weather stations are often embedded in remote control systems and traffic environment.



Macs weather alert

Weather Alert System

Weather alert System

Available on



GENERAL DESCRIPTION

Macs weather alert is one of the Platform ITS TMacs modules that allows you to manage alarms in case of weather warnings to civil protection, law enforcement, etc. The Weather Alert System is intended to ensure correct and constant flow of information.

In this form you can send alarms to citizenship, from a single web portal, in a timely manner, with a simple click. The alert communication is addressed to the citizens, so that they pay attention to possible risks related to weather phenomena and to adopt correct behavior during hazard events.

For each device you can set the type of risk and associate it with 4 codes of criticality through 4 identifying colors:

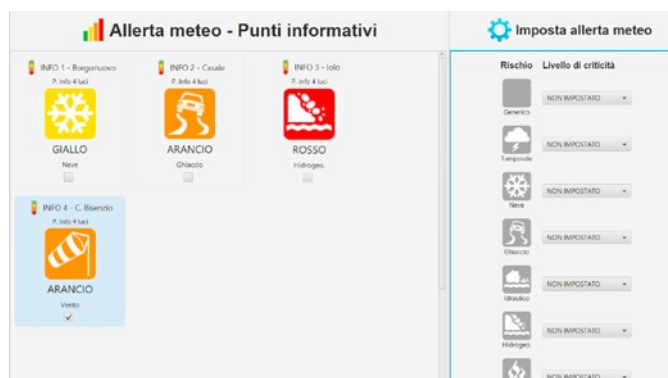
- GREEN: no state of alert;
- Yellow: occasionally dangerous, phenomena and local effects;
- ORANGE: danger with phenomena and widespread effects;
- RED: grave danger with phenomena and significant effects and extended.

GOALS

- Fully integrated and interacting with each module of the platform TMacs
- alarm management in case of weather alert
- userfriendly Web platform
- Manageable by Smartphone and Tablet
- You can alert sent to multidevice

BENEFITS

Macs weather alert poses no territorial limits of the sending action, with a simple click you can make visible the degree of alert of all devices connected to TMacs Platform: Variable message signs, warning lights display 3 lights, Warning Totem 4 lights with the possibility of sending a mailing list, SMS list and social channels in use as twitter, facebook.



Flood Control System

Available on



GENERAL DESCRIPTION

Macs Flood is the web-based platform solution for the monitoring and the control of underpasses flooded. Just a "click" and wherever you are, thanks to the potential of the platform, entirely web based, you can monitor the status of underpasses and devices connected to these.

With Macs Flood can be notified by text message or via email system by pre-alarm or warning caused by flooding the underpass and decide in real time strategies intervention to be performed.

Macs Flood represents the scalable quick solution to be integrated and functional to make the road network safer in case of weather events, typical of recent years, thanks to the rapid response of the system can protect the safety of citizens.

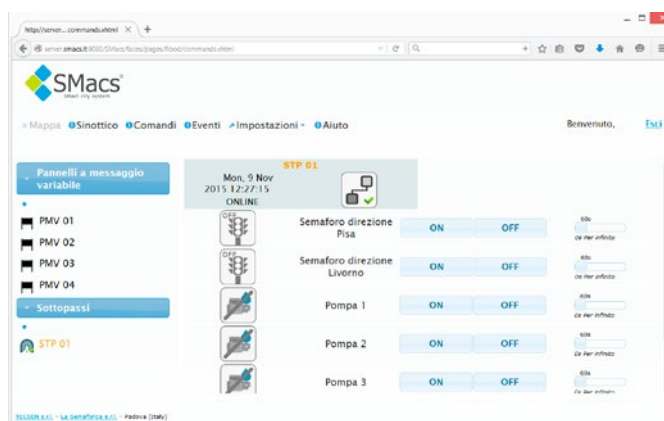
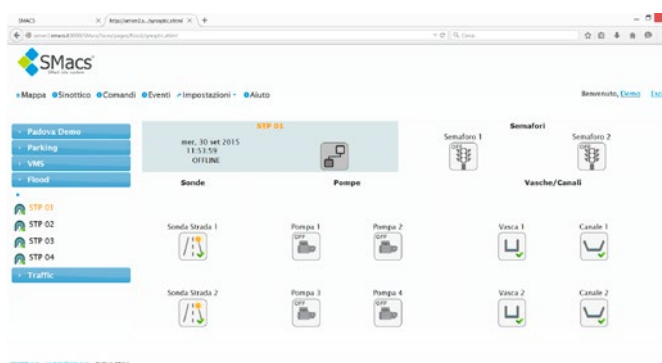
APPLICATION

- Centralization of road underpasses, railway and pedestrian
- Real-time monitoring of water collection tanks parameters
- Storage of the statistics of flooding
- Inform in real time through VMS, Web, smartphone and tablet onset of anomalies



MANAGEMENT SYSTEM

Macs Flood aims to put in safety the underpasses in cases of heavy rainfall, monitoring its status and providing a series of alarms and messages in the event of the presence of anomalies and excessive water on the road surface.



Alarms, activated by sensors level, specifically included in the sewage collection tanks, and one/two water sensors on the roadway will trigger visual signals stop for vehicles (traffic lights, red light) appropriately positioned and will be transmitted to the appropriate recipients.

All alarms will be centralized and displayed using the most modern computer systems.

Monitoring System of the air quality

Available on



GENERAL DESCRIPTION

Macs Air is the Tmacs Platform's tool for the study and monitoring of the air quality in your City.

Specifically, it is possible to identify the amount of polluting substance that unfortunately are present in the air as CO, NO₂, O₃, C₆H₆, CH₄, SO₂, H₂S, NH₃, VOC, CO₂.

Macs Air is a crucial tool to assess and monitor air quality: an important issue in the light of the global targets for the Kyoto Protocol for 2020.

GOALS

- Fully integrated and interacting with each module of the platform TMacs
- User-friendly
- Accuracy and reliability

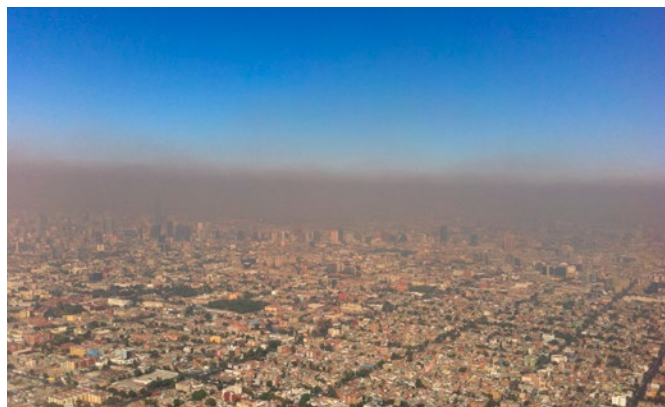
BENEFITS

The completely remotely managed system allows you to have data on the amount of polluting substance that along with traffic data can give us an overview of the condition of our roads.

In a logic of sustainable development, aimed at improving the environment and the traffic management, Macs Air is the module that can not miss in your city, to counter global warming, a phenomenon which is absolutely clear and proven human responsibility.

Macs Air can help the organizations to schedule events mitigation polluting emissions within the city.

Air Macs, Macs Traffic and Macs Analysis are the tools that allow you to study and adopt strategies to reduce traffic and limit the impact on our health and the environment.



Automatic warning about the State of the Devices

Available on



GENERAL DESCRIPTION

TAlert is the ideal solution for automatic notification via SMS and e-mail in case of malfunction device.

GOALS

- Fully integrated and interacting with each module of the platform TMacs
- Optimization of resources for the maintenance of roads
- User-friendly

BENEFITS

The system allows to inform users of the platform or maintainers on the system status by sending their notification in case of fault.

Notifications are sent to e-mail and to the mobile phone numbers entered in the respective list.

The events foreseen to send notifications to various users that manage and control the plants are broken down by gravity and level:

Info: information about the conditions of the device

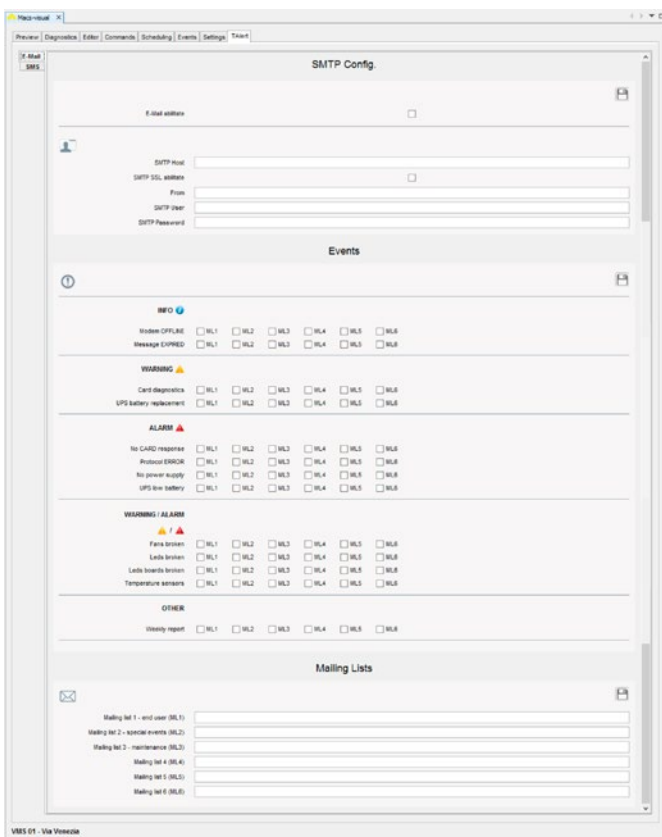
Warning: anomalies in the system, but not affecting

Alarms: events that require prompt intervention

Report: possibility of weekly or monthly receive reports about events that occurred.

The system allows to inform as individual entities with the ability to create multiple lists with the users to be notified by joining together with each system problem, divides the operators by type (for example, maintenance workers, supervisors, installers, etc.) So that notifications are sent to people really interested in the problem.

The TAlert can be managed by the Software or by Ente responsible for its own facilities.



Macs social

Share TMacs

Available on



GENERAL DESCRIPTION

Macs Social allows the integration of the modules of the platform Macs with social channels.

Social channel is fundamental in the management of the Smart Cities because it makes available on your smartphone the information gathered on the road and the messages managed by local authorities in real time.

GOALS

- Fully integrated and interacting with each module of the platform TMacs
- Mobile information, information sharing
- User-friendly

BENEFITS

The system allows you to inform the community with a simple click, by sharing the information detected by the plants of TMacs Platform as the presence of accidents, the status of restricted areas, the presence of flooded underpasses, the presence of ongoing work, the active messages in variable message panels, etc .. to try to inform the social community.

Each of TMacs platform module arrives to all through Social Macs.

Macs social has the aim to inform the public to make it aware of the real time situation to decrease the amount of traffic in the saturated road sections.





Discover more about
TMacs & SMacs

www.tmacs.it
www.smacs.it



Web & Mobile

Macs  weather alert
Weather Alert System

Macs  parking
Info & Guidance System

Macs  weather
Weather Monitoring System

Macs  traffic
Urban Traffic Control System

Macs  visual
VMS Management System

Macs  predict
Traffic Prediction System

Macs  ZTL
Restricted Area System

Macs  tracking
Traffic Priority System

Macs  analysis
Traffic Analysis System

Macs  air
Air Quality System

Macs  flood
Flood Control System





SEDE: Via Ponticello, 17 - 35129 Padova (PD) - ITALY

T. +39 049 773055

F. +39 049 8074002

T. +39 049 8599361

F. +39 049 8599215

www.lasemaforica.com

info@lasemaforica.com

www.tecsen.it

info@tecsen.it