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# DOSSIER

SMART CITY 2017



# SMART CITY

We develop Smart Cities

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It's a trendy term. It's difficult not to bump into it in every document, report, memorandum, presentation or statistics of public administrations that wants to be in the latest issues, such as service management, new economy, transport or sustainability. Who doesn't want to live in a smart city?

In general terms, a city can be defined as "smart" or "smartly efficient", when social investment, human capital, communications, and infrastructures coexist harmoniously with sustainable economic development, relying on the use of new technologies (ICT), resulting in a better quality of life and a prudent management of natural resources, through participatory action and the commitment of all citizens.

From the technological point of view, a "smart city" becomes a highly complex ecosystem (a system that contains many subsystems), that is, a global ecosystem in which multiple processes is closely intertwined and difficult to approach or value individually.

The concept of "smart city" brings together four essential ideas:

- ▶ Environmental issues and energy restrictions;
- ▶ The fluent communication of the social actors among themselves: communities, citizens, companies, institutions;
- ▶ The shared use of goods and services, with an active participation of users in the conception of products, services, and operational modalities, and in some cases refusing the ownership and the individual use;

The integration of new information and communication technologies, robotics and intelligent transport systems, which strengthen the network operation; the modification of the energy matrix in favor of renewable energies, and the change of behavior and uses by citizens.

From **EMACS**, we put all our capacities and technology offer on display with the intention of strengthen the last three points

# SENSIT SYSTEM

## Intelligent Parking Management

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The SENSIT™ system is a wireless network between sensor nodes mounted on surface to recognize the presence of a vehicle in a parking space.

SENSIT™ nodes communicate wirelessly via a chain connection and send the information to the spaces management system, a comprehensive, real-time method of managing the spaces of an entire parking lot.

The infrared and electromagnetic detections combined effectively and using the vehicle detection algorithm to make the sophisticated SENSIT™ invulnerable to snow, dirt and leaves. Dual detection delivers unsurpassed performance in the wireless vehicle detection industry.

The SENSIT™ System provides real-time information on occupancy of individual parking spaces. The hardware is designed to be equally suitable for installation on surface parking lots, or parking spaces on the street. Occupancy information can be used to guide traffic to free parking spaces, but can also be used for occupancy time control application in parking spaces restricted by parking meters. For execution on the street the number of parking spaces occupied can be compared with the number of payments made in the parking meter. In case of excessive time, the system alerts a parking official of the presence of vehicles that have exceeded the hour. With this information you can determine when and where to punish.







# VAXTOR LICENSE PLATE RECOGNITION

Software VaxALPR™ for Traffic Control

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VaxALPR is a software to read the plates ready to use, and designed both for novices and for Experts. Adaptable to any environment, supports multiples camera makers and open results. There are several types of licensing, all useful for each environment that we can found for the traffic management.

# VAXTOR REDLIGHT SYSTEM

## Traffic Control in Red Traffic Lights

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VaxALPR™ RedLight™ is a solution for the detection and registration of vehicles that skip a red light. The system provides conclusive proof of sanction: color frames of the complete sequence of the infraction and automatic recognition of the registration. The state of the traffic light is detected by artificial vision and therefore it is not necessary to integrate it with any field element.

Its basic characteristics are:

- ▶ Detection of the traffic signal state through artificial vision.
- ▶ Independent installation, without connection to the traffic light or to inductive loops.
- ▶ Day/night operation.
- ▶ Infringement tests on color or video frames.
- ▶ Calibration, configuration and adjustment of parameters remotely.
- ▶ Additional vehicle counting function 24x7.
- ▶ Additional prohibited rotation detection function with RedLight™ double system.

Through the application of management and exploitation of results it is possible to manage in a comfortable way all control points of which the Smart City proposal is composed, allowing us to validate or cancel a proposal of sanction, obtain a sanction bulletin and automatically export the sanctions already confirmed, so that they interact with the appropriate mechanism to formalize the processing of the sanction.





# VAXTOR ACCESS SYSTEM

## Control of Traffic Flow (Low Speed)

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VaxALPR™ Access is a solution for access control of vehicles on streets, roads and public spaces. It recognizes the plates as it passes through the checkpoint as well as the direction of travel.

The results are reported to a proprietary management solution or stored raw for your OFF-LINE treatment. You can also export them to third-party environments such as Argos™ or Gespol™.

The solution works in centralized mode over high speed networks or distributed through 3G/4G, and is compatible with camera manufacturers such as Panasonic™, Axis™, Bosch™, Mobotix™, HIK VISION™, Sony™, Lumenera™, IDS™, Basler™, Avigilon™... in both analog and digital video.

Its basic characteristics are:

- ▶ 24x7 Access Control.
- ▶ Optional module for the management of zones, users, cameras, infractions and reports.
- ▶ Integration with third party systems such as
- ▶ ARGOS® or GESPOL®, apart from Helix™ -5.
- ▶ Distributed, centralized or mixed version available.
- ▶ Detection of vehicles in the opposite direction.
- ▶ Adaptable to almost any camera on the market that meets minimum requirements.

# VAXTOR FREE-FLOW SYSTEM

## Control of Traffic Flow (High Speed)

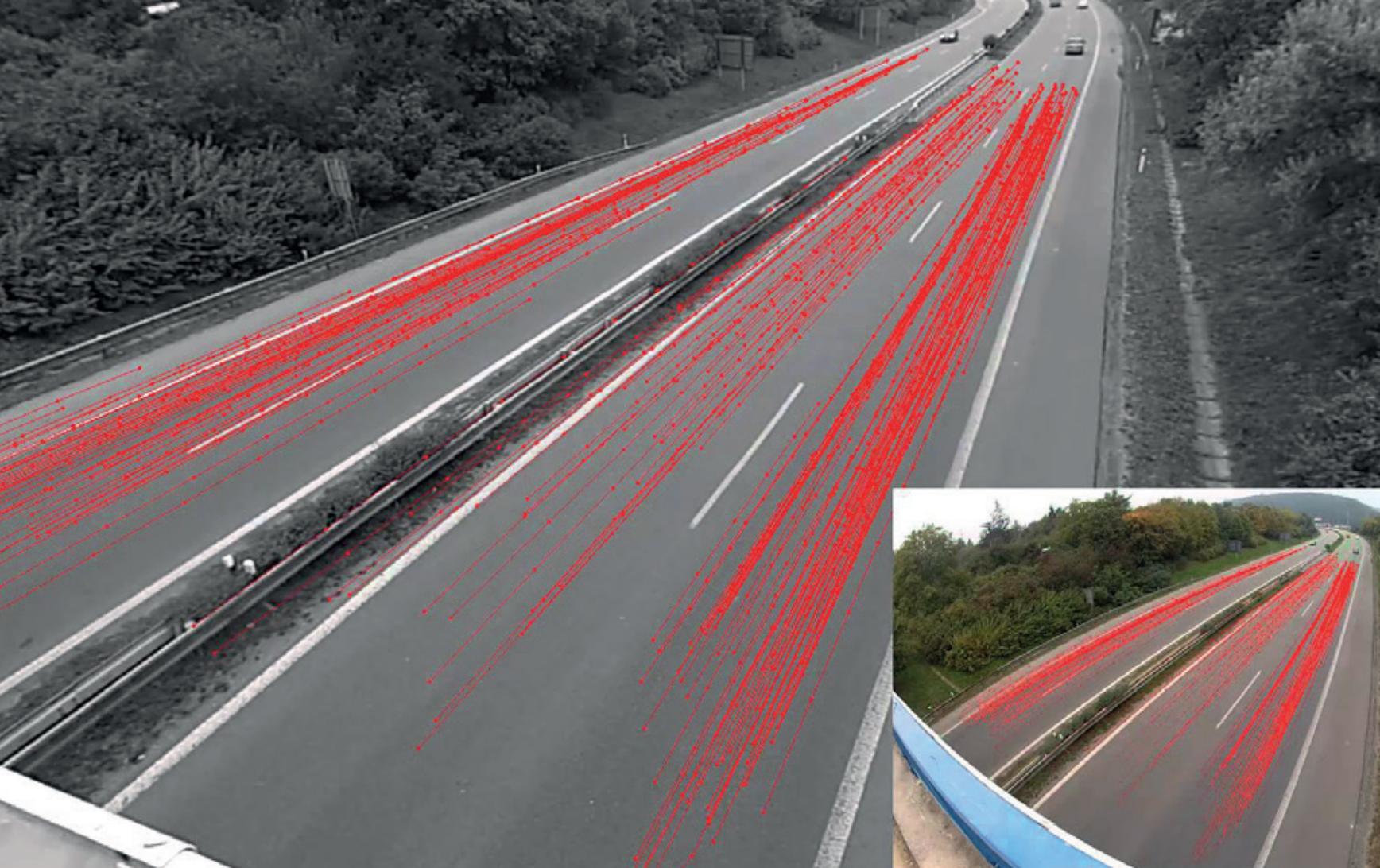
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VaxALPR™ FreeFlow™ is a license plate recognition system designed to operate at high density traffic control points at any speed and under almost any weather condition, with excellent performance on any scenario. Integrates with third-party video cameras and reports 3G, 4G, or open-fiber.

Its basic characteristics are:

- ▶ Read rate over 99% audited on highway.
- ▶ Compatible with all first brand cameras.
- ▶ Maximum reading speed over 250 Km/h.
- ▶ Recognition of multiple countries simultaneously.
- ▶ Multi-rail operation.
- ▶ Exceptional performance in adverse weather conditions.
- ▶ Available in distributed or centralized architecture.

The installation doesn't require sensors or electromagnetic arcs to activate the reading. The VaxALPR™ FreeFlow™ system is continuously "attentive" to the appearance of a vehicle in its field of visual analysis.



# VAXTOR SMART SURVEILLANCE SYSTEM

## Detection of Circulation Patterns: Anti-Merodeo

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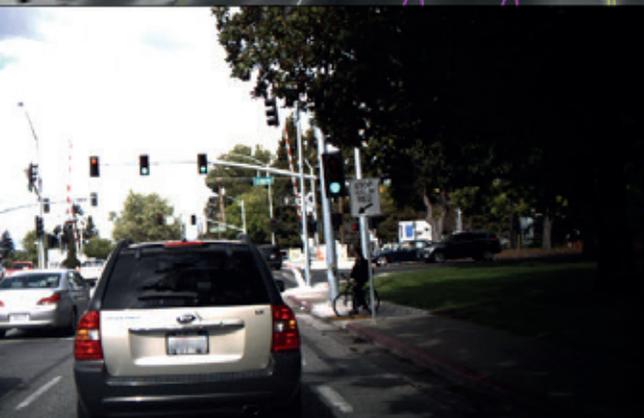
The circulation pattern detection system consists of a software and hardware solution to detect vehicles following certain patterns or driving sequences around the area controlled by the system.

VaxALPR™ Smart Surveillance™ reinforces the conventional surveillance system in enclosed areas, industrial estates, housing complex and even cities.

The surveillance is carried out in a totally autonomous way and 24/7 without the need for human intervention.

It incorporates a solution of exploitation of results denominated Helix-5 that receives in real time the results of VaxALPR plate's readers, it registers the plates in its database and check if it is included in one of the blacklists.

Alarms can be generated visually, acoustically or electronically via e-mail or SMS.



Driver instruction: Be cautious of trajectory in Lane 1 during curve. Vehicle in lane 2 may come



Its basic characteristics are:

- ▶ 24/7 Operation
- ▶ Real-time alerts
- ▶ Vehicle history detected
- ▶ Public and private sphere
- ▶ Detection of direction of travel
- ▶ Management of suspicious vehicles
- ▶ Local or remote administration
- ▶ Vehicles stopped or moving
- ▶ Fully scalable solution

The fundamental objective is to generate an alarm every time a camera in our surveillance network recognizes the registration of a vehicle that is blacklisted. Its general operation is as follows:

- ▶ The patterns and rules are applied and monitored on each vehicle individually through reading their plates. Rules or patterns are created in a space-time context, that is:
  - Control points or paths are defined by the number and location of the cameras that detected the vehicle
  - The repetition frequency of passage by control point or trajectory executed by the controlled vehicle.

- ▶ Each rule applies within a certain time period or perpetually. Consequently the detection of circulation patterns is defined from a set of rules created and applied within a certain time.
- ▶ Each time one of the rules is met, the system will generate an alarm by providing the photograph or video of the vehicle in question, as well as the report of its registration number.
- ▶ We will also introduce two types of exception to the:
  - White lists: vehicles plates exempt from analysis
  - Blacklists: vehicles plates that will generate an alarm in the system as soon as one of the cameras detects it, regardless of the rules.

# BARRIERS OF VEHICLES PASS

## Residential, Corporate and Toll Use

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A barrier allows the access of vehicles to a restricted area, such as parkings, garages or restricted use / paid roadways. Each barrier can be combined with the use of access controls or other identification mechanisms that identify its users.

In EMACS, we do not care about the need for toll roads, parking areas, access to bridges, tunnels, level crossings, or the closure and entry control of private or industrial areas... you can always find in our ranges of barriers the product that best suits your application.

Certain parking areas covered or outdoors, such as pay parking areas, require an entrance and exit control. We have designed for these applications reliable barriers, that allow a synergy with an external management system.

In tolls, the reliability, resistance and rapid treatment of large flows of vehicles is indispensable.







# DIGITAL INTERFONY

## What is Interfony?

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The intercom solutions have left behind the image of the single line entry phone and a single button. With a wide range of communication and building management configurations, the interphone provided by EMACS stands as the reference technology for the future that covers everything: from audio and video communication to security in buildings. Access control, parking and maintenance of facilities.

Behind this versatility, there is a powerful technical architecture that coordinates and takes care of the three key functions of the current intercom applications:

- ▶ Reliable connection for the audio/video communication point to point.
- ▶ Management functions and control buildings.
- ▶ Integration of others systems (video, mobile radio, PA system,...)

The market needs for today's intercom systems are as varied as the environments in which they are used.

We are specialists on the IP Video Entryphone for every type of markets: public roads, businesses, shops, high-end housing and owner communities. We offer the most reliable products from the best international manufacturers.

Nowadays an IP telephony deployment includes not only SIP phones but other devices such as intercoms or public address systems that unify the voice through a single platform.



## INTEGRADED P.A.

### P.A. (Loudspeakers) and IP Systems

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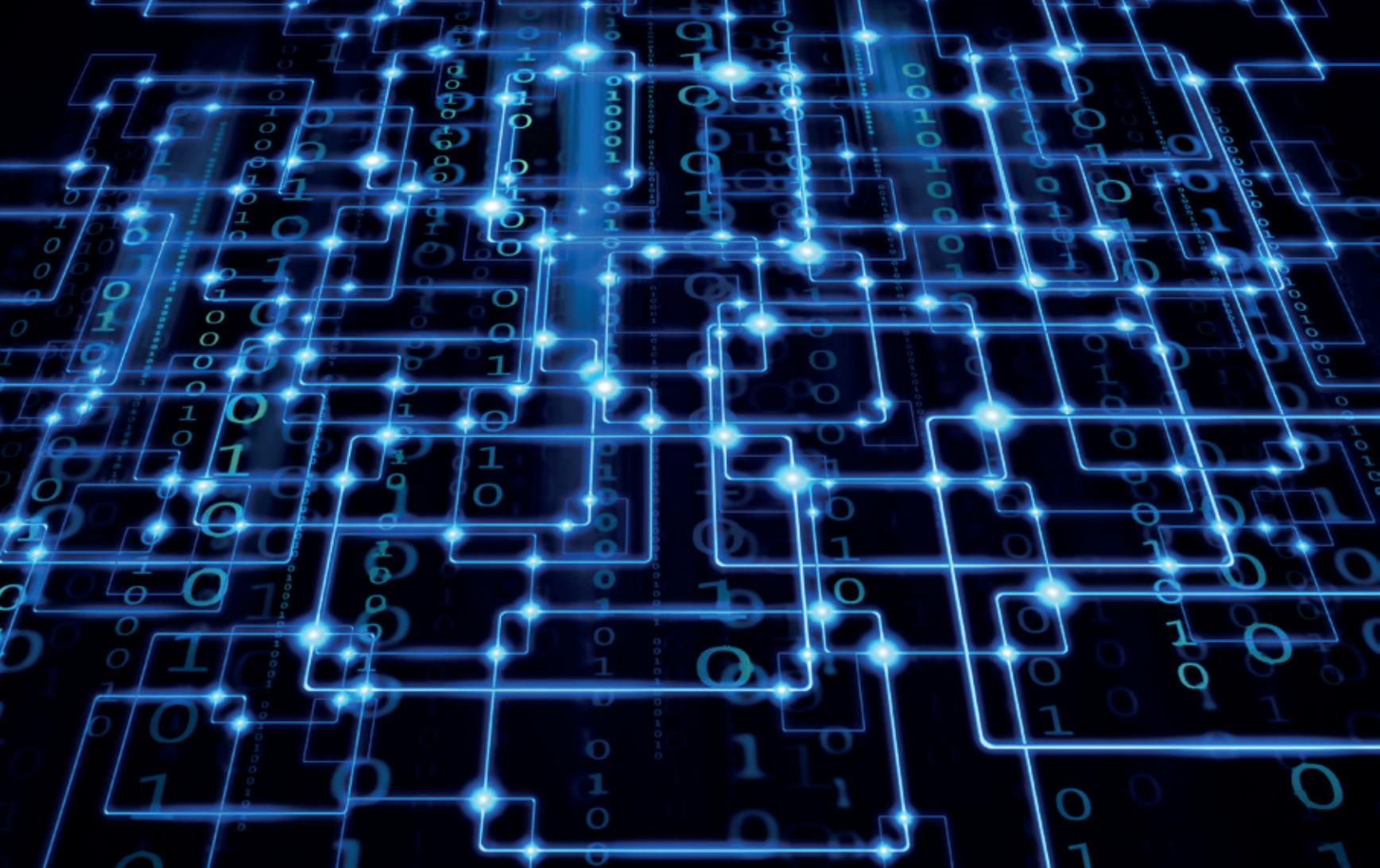
Loudspeaker systems are elements of great help in situations of risk, such as floor evacuations or alarm situations in general.

This type of situation requires systems that ensure total efficiency and that allow to communicate safely messages and emergency instructions facilitating evacuation processes.

In the same way, the loudspeakers systems are practical communication tools for multiple applications within companies, office buildings, public facilities, and large areas.

The best guarantee of our solutions is supported by the leading brands and manufacturers in the sector with which EMACS collaborates and works.





# INTEGRATION AND CENTRALIZATION

## Centralization Services

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Once the EMACS consultants have agreed to the requirements with the customer, we use all possible tools, including test prototypes, to anticipate and solve problems before deployment.

EMACS project managers and their specialists deliver complete solutions, including delivery management, installation and commissioning, verification and training.

More and more successful companies prefer to focus their limited resources on their key business areas rather than assigning them to manage their communication networks. Increasingly successful companies prefer a predictable periodic cost than an investment. For these companies we have designed our equipment financing offers and our managed maintenance services.

Energy savings, optimization of resources, centralization of information and communications, greater security in the development of all processes, and maximum use of available resources are the objectives of EMACS for Integration and Centralization Systems.

And this technology is an essential formula today in large security facilities, unique buildings and new constructions, in addition to increasing importance in medium and small facilities.



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### IP networks

Modern digital technology allows different sectors, such as telecommunications, data, radio and television, to merge into one. This circumstance, commonly known as convergence, is occurring on a global scale and is drastically changing the way people and devices communicate. At the heart of this process, forming the backbone network and making convergence possible, are IP networks.

In EMACS we install and certify all types of IP networks, whether the infrastructure count on wiring and fiber optics. In addition, in our STORE it is easy to find all kinds of switches, UTP and fiber paced, and much more!

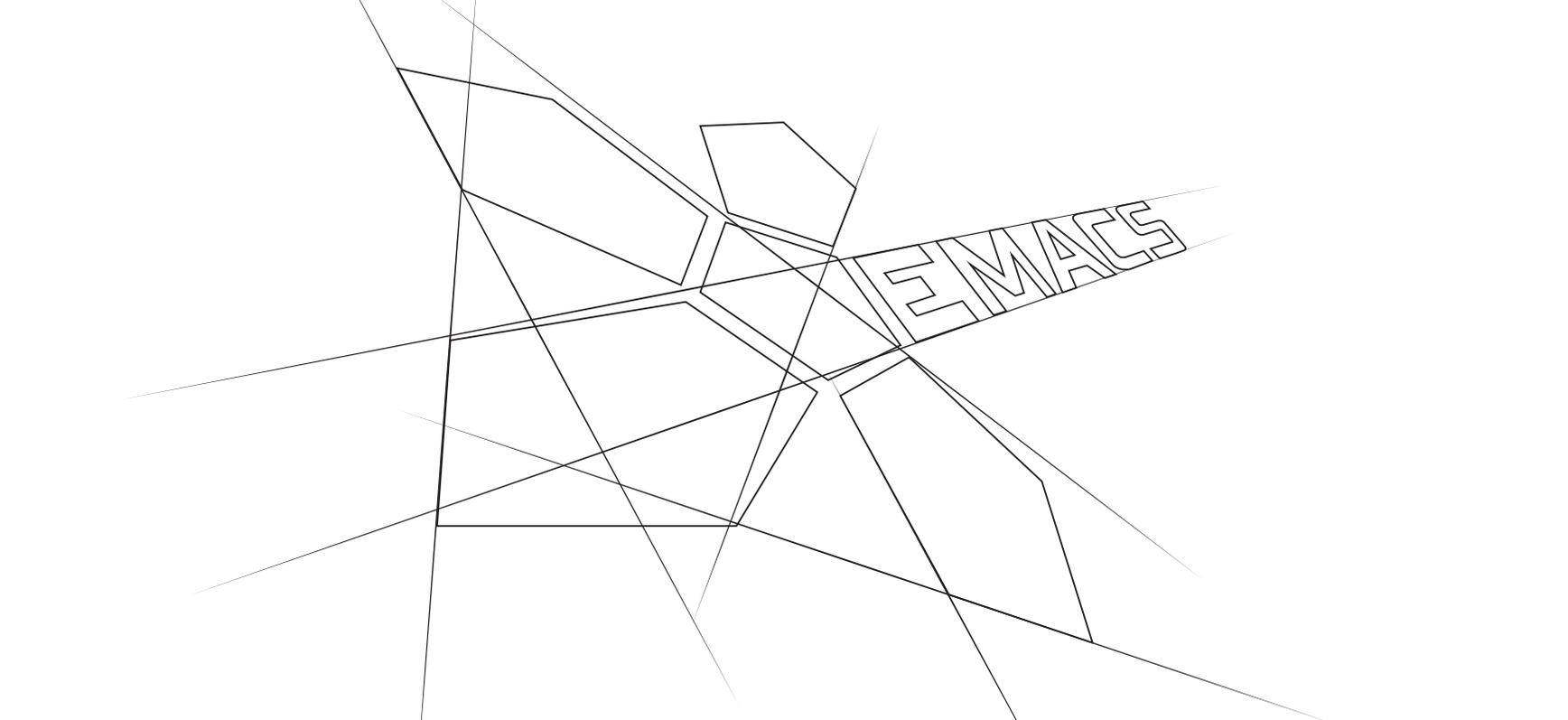
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### KVM systems

A KVM switch (KVM stands for “Keyboard, Video & Mouse”) is a hardware device that allows the user to control multiple computers from one or more sets of keyboards, video, and mouse. Although several computers are connected to the KVM, usually a small number of computers can be controlled at any time. The most modern KVM devices have also added the ability to share other peripherals such as USB and audio devices.

In EMACS we have all kinds of KVM devices. Visit our STORE!





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