

# SMART CITY ARELSA

A SOLUTION FOR THE INTEGRATION OF URBAN FACILITIES

**SMARTOWER®**

URBAN CONTROL TOWERS

**CITIGIS®**

SOFTWARE FOR THE TELEMAGEMENT OF  
MUNICIPAL SERVICES AND FACILITIES

**CITISMART®**

SMART CONTROL TERMINAL



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# SMART CITY, THE CITY OF THE FUTURE

Smart City defines a modern, sustainable city that applies the latest technologies to all the urban fabric to achieve an efficient and smart management of the city and its services, easing access to information and promoting the collaboration between citizens, the Administration and private corporations.

For Smart Cities to become a reality first we must create a solution that combines infrastructure and information systems, manages knowledge, adds value and simplifies operation.



## SMART CITY IS...

### Intelligence and synergy between municipal services

A Smart City integrates and maximizes the efficiency of municipal services:

- Street and artistic lighting.
- Electrical vehicle recharging stations.
- Wi-fi hotspots.
- Environmental monitoring.
- Traffic lights.
- Fountains.
- Irrigation systems.
- Security.
- Waste disposal.
- Bus stops.
- Publicity.
- Information point.

### Immediate benefits for the city and its citizens

A Smart City promotes technology and is environmentally friendly:

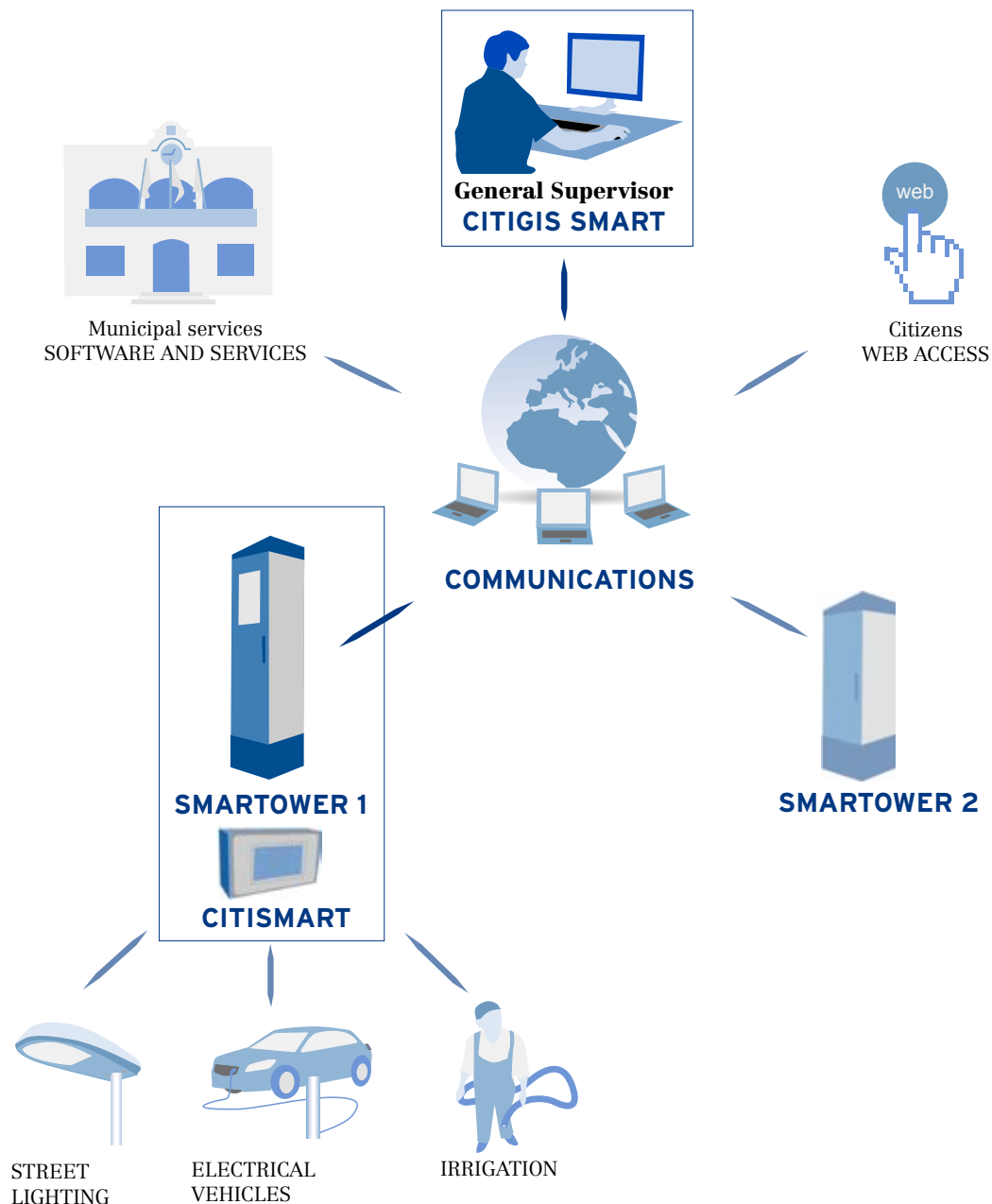
- Improves synergies between municipal services.
- New facilities are conceived as urban furniture, resulting in a better integration with the city.
- Helps to develop new, state-of-the-art technologies.
- Creates highly qualified employment.
- Improved and safer services for the citizen.
- By unifying supplies it reduces power consumption and communication fees.

# SMART CITY ARELSA

## A SOLUTION FOR THE INTEGRATION OF URBAN FACILITIES

In Arelsa we follow the market attentively so we can anticipate advanced solutions for future problems. Benefiting from our 20 years of experience in urban telemanagement, our new family of products for a real Smart City emphasizes connectivity, synergies, intelligence and efficiency.

Our solution for the Smart City is now a reality: tested in the lab and in the street, we offer a finished, reliable and open product customized for every project and installation.



## **SMART CITY ARELSA** consists of:



### **URBAN SMARTOWER®** For the consolidation of infrastructure

These next generation street cabinets house electrical, electronic and communication devices that link street equipment with management centers using a very powerful telecommunications network.



### **CITIGIS®** Multiservice telemanagement software

Citigis is a tool that collects, organizes and transmits data from the facility to the decision making centers, while allowing citizens direct access to information.



### **CITISMART®** Smart terminal designed for the management of the Smart City

It is the brains of a multiservice urban installation and the link between the control room and the services. It can be customized for each project, gives connectivity to services deployed in the street and allows an intelligent management of the ensemble.

## **Smart City Arelsa:** savings, revenue, total management

Our solution offers the following advantages and benefits:

- One electrical feeder and a single communications contract.
- Minimum use of urban space since one cabinet hosts several services.
- Capacity to house, power, communicate and exploit all types of municipal services: electrical vehicle recharge, street lighting, irrigation, traffic lights, security systems...
- Compatible with most common standards and communication protocols.
- Services have a direct impact on the citizen: information points with location data, environmental parameters or Wi-fi.
- Publicity boards.
- Easier and more efficient operation and maintenance.
- Management integrated on a single platform at the Control Room.
- Real-time information about the performance of the installation.
- Quality guarantee and KPI follow-up.
- Focus on creating a more sustainable city and a healthier, safer environment.

### **Technical assistance**

If you wish we can accompany you through the process of deploying your own Smart City installation. Benefit from our knowledge and experience!



# SMARTTOWER®

## URBAN CONTROL CABINETS

- 1- Special rooftop module for antennae
- 2- Refrigerated module for equipment that generates heat
- 3- Information point
- 4- Information or publicity boards, vinyl or lit by LEDs
- 5- Security lock
- 6- Stainless steel plate with rounded borders
- 7- Stainless steel 300mm plinth for an easier installation in the street



The SmarTower is a new generation control cabinet that houses electrical, electronic and communication devices to supply energy and connectivity to municipal services and facilities. They substitute traditional electric cabinets, consolidating infrastructure and reducing urban furniture.

## **DESIGNED AS URBAN FURNITURE**

- Perfect combination of image and endurance.
- Svelte, smooth and harmonious.
- Occupies little surface and has no visual impact.
- Capable of working on street conditions.
- Compact, maximizes use of internal and external space.

## **EQUIPMENT**

### **The SmarTower can house:**

- Electrical feeders.
- High-speed communications devices.
- Electrical and electronical equipment for protection, command and control.
- Energy saving equipment.
- Communications antennae.
- Publicity boards.
- Information screen.

## **PRODUCTION**

- Main body comes in several sizes and may combine different modules.
- The interior is divided in independent spaces to house the electrical feeder, measuring equipment, telecommunication devices, electrical vehicle recharging systems or irrigation modules, among other services.

## **QUALITY AND GUARANTEE**

- ISO quality control and CE mark.
- Two year guarantee, optionally extendable.
- Plug-and-play: all products are delivered totally configured and programmed.

# SMARTOWER®

## TECHNICAL AND CONSTRUCTIVE CHARACTERISTICS



## CAPACITY

**SMARTOWER® 520**
**SMARTOWER® 700**
**SMARTOWER® 850**

Power	40 kW	100 kW	300 kW
IP addresses	8	16	24
Electrical vehicle charging points	4	10	30
Street lighting outputs	6	9	12
Wi-fi hotspots	2	4	8
Dimensions (in mm.)	520 x 520	700 x 700	850 x 810





## TECHNICAL CHARACTERISTICS

- Operation voltage: 3 x 400/230V.
- Power range: 40 to 300 kW, depending on the model.
- Protection degree: IP 66, IK 10.
- Temperature range: -20°C to 45°C.
- Quality control and CE mark.

## CONSTRUCTIVE CHARACTERISTICS

- Stainless steel external plate type AISI 304, 2 mm thick.
- Stainless steel fixing base and 300 mm. plinth.
- Main body and auxiliar modules come in different sizes.
- Special module for antennae lodging.
- Security locks.
- 4 publicity or information vinyl boards. LED lighting optional.
- Information screen.
- Independent spaces.

The SmarTower® patent number is M2950467-8, as registered by the Spanish Patent Bureau.

Model patents:  
Nº U 201 001 231  
Nº U 201 001 232  
Nº 1.110.357/1-11

# SMARTOWER®

## BASE MODULES AND APPLICATIONS

### BASE MODULES

Base modules supply power and connectivity to the rest of services and facilities

#### ENERGY

The Energy Module supplies power to all the equipment inside the cabinet and the services deployed in the street.

It is formed by the electrical feeder, the meter, the distribution line and the general protections.

#### COMMUNICATIONS

The communications module provides high speed connectivity to the rest of services.

##### Telecom provider

The SmarTower houses the telecom provider's high speed equipment (3G, optic fiber, ADSL...)

##### Flexible protocols

Communications from the cabinet to the equipment deployed in the street depend on each service. The whole system is open to any market technology.

### APPLICATIONS

#### ELECTRICAL VEHICLE RECHARGE

Electrical vehicle recharge requires of infrastructure capable of supplying high levels of power.

##### Power supply and control

Depending on the model, a SmarTower may feed from 4 up to 30 recharging points as well as the control equipment.

The cabinet is compatible with any recharge mode.



# SMARTTOWER®

## APPLICATION MODULES

### STREET LIGHTING

The SmarTower's street lighting module contains all the equipment for the control and management of street lighting.

The number of outputs depends on the model, the biggest SmarTower housing up to 12 circuits

### Energy saving systems

Street lighting is the biggest energy user in a city, representing up to 55% of total consumption. It is therefore essential to implement efficient methods of control and consumption.

### ENVIRONMENTAL MONITORING

The SmarTower helps to deploy sensor networks along the street and can easily house the control PC or sensor hub.

### IRRIGATION

The SmarTower can consolidate irrigation systems, house the programming devices and feed the output circuits.

### SECURITY

Hybrid fiber and power outputs feed and communicate security cameras in the area.

## INFORMATION MODULES

### A must-have in today's information society

### WI-FI HOTSPOT

The SmarTower's high speed connection and the special antennae module can house Wi-fi equipment and serve other hotspots in the street.

### INFORMATION POINT

An information screen can be installed on the doors. Content is controlled by a PC and can be updated remotely.

### PUBLICITY

The SmarTower lateral boards can be customized to show information or publicity. They are made of vinyl and can be lit by LEDs.

### Other modules



With our Smart City solution any service or facility can be easily integrated in the city.



**CITIGIS®**

**THE SOFTWARE PLATFORM FOR THE SMART CITY**



## **CITIGIS<sup>®</sup>, MODULAR AND SCALABLE**

### **The CITIGIS software allows to integrate independent GIS cartography, Inventory, Telemanagement, Maintenance and Energy modules into a single platform**

A smooth integration of the modules makes Citigis a very powerful tool for the rational, unified management of urban services and facilities.

State-of-the-art: Citigis is developed in-house, hence the architecture is constantly upgraded to guarantee its unbeatable features and security.

Turnkey Citigis: the platform is carefully customized for each user.

### **Main benefits**

Citigis is designed to gather real-time data securely and efficiently and exchange it with other management platforms.

- Open platform, compatible with most international protocols.
- Works with main cartography standards and online maps.
- Multiuser with different access profiles.
- Multipost, several users can operate it simultaneously.
- Enhanced document management (images, projects, designs, etc.)
- Easy data import/export.
- Automatic security back-up.

### **Smart integration, better than the sum of its parts**

Integration is not a mere cumulation of features but the ability to link and use different modules and applications to achieve a common goal.

A thought-out and uniform design makes operation easier, improving productivity.

Moreover, a smart integration ensures the integrity and coherence of data, reduces redundancy and helps to detect information disparity.



# CITIGIS®

## THE SOFTWARE PLATFORM FOR THE SMART CITY

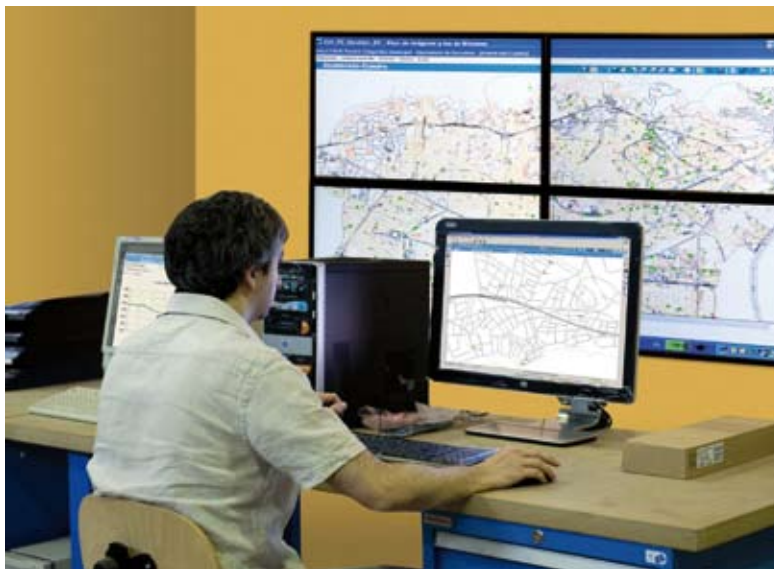
### INTEGRAL TELEMANAGEMENT

#### Total control of your services

Citigis' Telemanagement module displays the global state of the services and facilities, regardless of the size of your city.

Once the control room has been set up it is possible to monitor and surveil real-time elements deployed in the street such as light points, electrical vehicle recharge points, environment sensors, irrigation, cameras, etc.

Telemanagement is a fundamental tool to exploit and maintain facilities because it provides accurate information, a key element for the right decision-making process.



### Telemanageable applications

#### Electrical vehicle charging stations

##### Street lighting

- Command terminals
- Voltage dimmer-stabilizers
- Point-to-point equipment

##### Building energy management

- Power meters
- Water meters

#### Wi-fi hotspot

##### Weather and environment

- Temperature, humidity, luminosity, CO<sub>2</sub>, NO<sub>x</sub>

##### Parks and gardens

- Irrigation programmers

##### Cameras and videosensors

##### Information point

- Publicity and Municipal information monitors

## MAINTENANCE

### Smart alarm reporting and management



Citigis Maintenance module manages events and alarms from the terminals or from other devices.

Citigis Maintenance allows smart fault reporting; by checking alarms, inventory and error logs it can identify the source of a problem and suggest how to solve it.

When Citigis detects an event it informs the Maintenance Squad automatically, speeding repair.

## GIS INVENTORY

### Customized inventory

Citigis Inventory helps to implement a thorough inventory of the city's assets, facilities and services.

Its search engine improves the management of municipal assets.

Data fields can be added or customized to reflect any detail. Fields may also be deleted if desired.

The module also generates over 20 different reports.

### GIS cartography

Citigis has a very powerful graphic motor and can represent your city in standard formats (AutoCAD, Microstation, Shape...).

GIS cartography customizes layers and elements and offers a wide range of functionality:

- Customized symbol library, Id tags and free text.
- View selection, both layers and elements.
- Simultaneous views.
- Zoom.
- Rotation, distance calculation, itineraries.
- Smart printout (scale, mosaic).



### Go Googlemaps

It is now possible to visualize the inventoried assets on Googlemaps.

### Corrective and preventive actions

- Automatic alarm report creation/deletion
- Manual reporting
- Detection of repetitive faults
- Follow-up of pending alarm reports
- Search engine
- Management in mobility with CitiMobile
- Automatic email and SMS notifications

# CITIGIS®

## THE SOFTWARE PLATFORM FOR THE SMART CITY

### ENERGY MANAGEMENT

#### Energy efficiency guaranteed

The Energy Management module is conceived to supervise contracting, billing and actual efficiency in facilities.

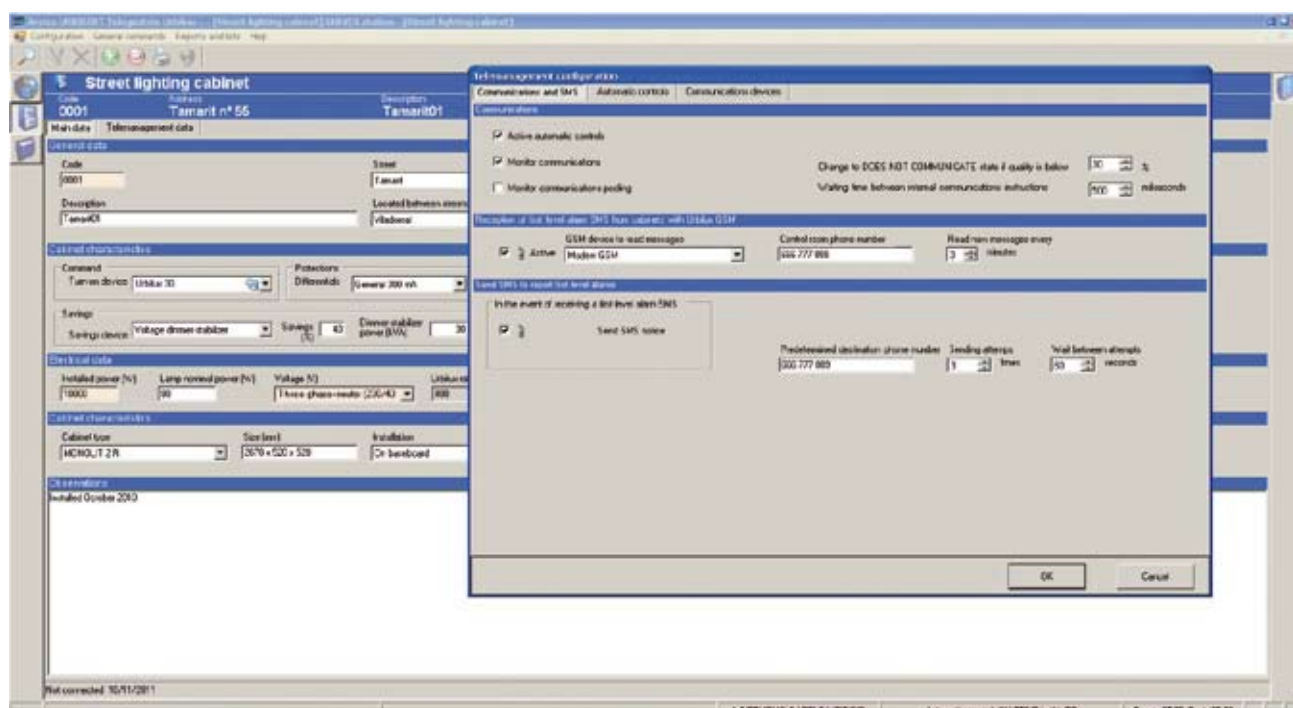
By taking automatic meter measurements, simulating consumption and importing supplier bills, the system can control the efficiency of the installation.

Citigis is a time-saver and helps you to detect anomalies, write reports and design energy saving plans.

### Audit-E, OUR NEW ENERGY AUDIT MODULE

Audit-e is especially designed to audit street lighting facilities according to the Spanish Norm for Energy Efficiency in Outdoor Lighting (RD1890/2008) and the IDAE protocol.

Audit-e simplifies the process by automatically gathering inventory, energetic and luminic performance data. The application then evaluates and qualifies the installation and reports infringements of the rule. Reports infringements of the Rule and reports non conformities to the Norm.





# CITIMOBILE

## CONNECTIVITY AND ACCESS

### CitiMobile makes it possible to manage your city any place, any time

CitiMobile is a set of smartphone apps that connect to the Citigis Control Room as a network post and allows to consult or manage the Inventory and Maintenance modules real-time from any location. It can also be used as a GPS navigator.

All operations performed by CitiMobile are reflected immediately and automatically on the server, other Citigis network posts and other CitiMobiles, so it is not necessary to return to the Control Room or retype information. It is possible then to continue to work simultaneously while saving time.



### CITIMOBILE APPS

#### Maintenance

The terminal is connected to Citigis, so you can check and manage the services real-time from any location: report a new fault, insert information (pictures, reports), close an alarm notice, etc.

#### Inventory

CitiMobile allows to inventory any facility on site and charge all information directly on the map, making the whole process easier and faster.

#### Navigator

CitiMobile may be used as a GPS navigator and it also produces itineraries to better reach the facilities.



# CITISMART®

## ADVANCED CONTROL TERMINAL FOR THE SMART CITY

### CITISMART®, ADVANCED MULTIFUNCTION



CitiSmart has great management capacities and can communicate and control many terminals, sensors and nodes.

It is small (180 x 110 x 70 mm) and easy to install, operate and maintain.



## CITISMART<sup>®</sup>, ADVANCED CONTROL TERMINAL FOR THE SMART CITY

### CitiSmart, the brains of a multiuse urban installation

CitiSmart, our newest telemanagement terminal, is the third piece in our Smart City solution. The link between the Control Room and the services in the street, it collects information, interacts with the services and provides connectivity.

Among its functions:

#### Integration of control systems

CitiSmart can manage all municipal services: energy and water meters, irrigation terminals, savings equipment, point-to-point control terminals, sensors, protection devices...

Services are programmed, controlled and monitored from the control room, enabling a fast and cost efficient deployment.

#### Data log

The CitiSmart is equipped with a large memory and can store thousands of logs.

#### Energy metering

The measuring hardware enables energy control and network analysis functions.

#### Programmed actions and alarm control

Output relays can be programmed to identify faults and alarms.

One analog input allows to use monitoring sensors.

#### User-friendly interface

The terminal integrates a touch screen, facilitating access to data, measurements and programming.



#### Custom

Citismart functionality can be upgraded by loading customized applications.



### EMPHASIZING COMMUNICATIONS

Connectivity and communications are essential in the Smart City, this is why a smart terminal must be compatible with the largest number of systems and standards in the market.

CitiSmart has a wide range of interfaces and communication ports both towards the control room and the peripheral terminals.



## LEADERS IN SOLUTIONS FOR MUNICIPALITIES



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