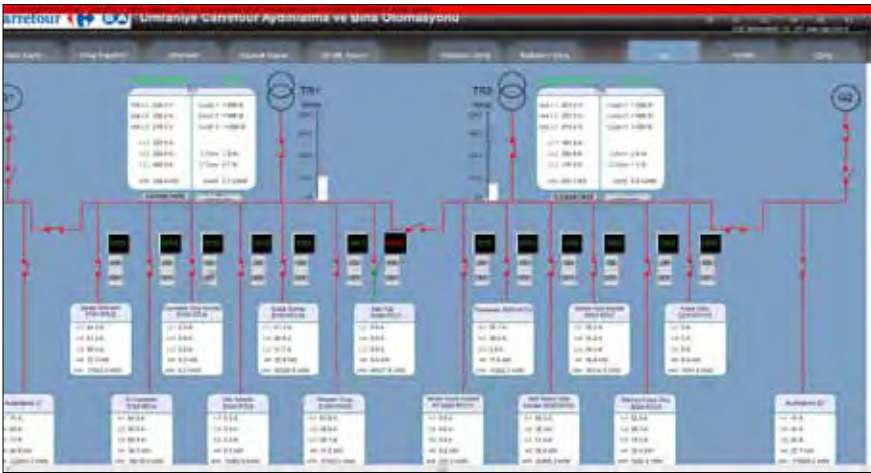




## CarrefourSA Turkey implements zenon for efficient Energy Management

Carrefour opened their first shop door in 1963 in France and today they boast with more than 16,000 stores in over 30 countries engaging around 470,000 employees. In 1993, CarrefourSA opened their first store in Istanbul, Turkey and with the help of its cooperation with Sabancı Holding, the business began to take off. Today, CarrefourSA has 243 stores in Turkey, employing 8,000 staff.



*Simple, easy-to-understand menus ensure that the user can work efficiently with zenon.*

## THE PROJECT

For the retail sector, energy is one of the main expenditures and this, in turn, has a direct effect on the price of the end product. Lighting, cooling, heating and refrigerator systems consume energy in significant amounts, and these should be monitored for energy efficiency and consumption. At the beginning of 2012, Carrefour-SA started an energy saving program with an investment plan to improve their lighting and automation systems. The program required a central control and management system with the ability to control and monitor all consumption areas.

## THE GOAL

The goal of the project was to reduce the overall annual energy consumption, particularly where equipment was out-of-date, and gain full control of the retail stores from one central location.

## THE SOLUTION

The solution for fully automated retail markets consisted of implementing central and remote SCADA servers with the ability to handle large numbers of parameters, installing new energy meters, automation panels and PLC control panels. zenon was the best solution – with its ability to handle numerous monitoring parameters and its advanced networking features.

## WHY ZENON SUPERVISOR?

zenon Supervisor is an independent SCADA system, with which you can operate more profitably in the long term. Make work easier, inspire your customers and motivate your employees. Automate quickly and safely with zenon Supervisor and have the perfect tool to bring ergonomics to your projects, from engineering to the runtime, or in maintenance. With the proven principle of “setting parameters instead of programming” you can shorten

your engineering time by up to 80%. Extensive network functions, simple access via any web browser and connection of any desired hardware – zenon already offers all this “out of the box”.

## ENGINEERING

You can develop projects in your own particular style, use available templates and intelligent wizards. You are able to reuse previously created objects and symbols in other projects and keep an overview with the multi-project administration, also when working in a team.

## MAINTENANCE

Well documented and offering version administration, you can quickly find your way around any project and also easily access projects and equipment remotely.

## HOT RELOAD

The Hot Reload available in zenon allows changes to be made, even during a running operation. And your production keeps on running.

## REPORTING

You will be informed of whatever is happening in as detailed a way as you wish. Starting with the history of changes in engineering, up to effective reports in the Runtime, right up to calculating complex KPIs such as OEE.

## NETWORK

Full data security, maximum availability without downtimes as well as secured data is guaranteed. zenon network technology with seamless redundancy and circular redundancy makes it possible.



Via this map, showing Carrefour supermarkets in Turkey, operators can choose specific markets and gain access to all related valuable data and process information.

## SECURITY

zenon is continually adapted to meet modern safety standards. This provides stable and safe equipment running.

## DALI LIGHTING AUTOMATION WITH SCADA

zenon Supervisor has over 300 communication protocols available, making integration of projects easier. These benefits have been utilized by SGE Engineering who have integrated DALI Automation in CarrefourSA hypermarkets, meters, various PLC systems and I/Os.

As part of the energy saving project at CarrefourSA, the SGE Engineering team executed a dimming project which resulted in 50% savings in hypermarket lighting and even more when there is adequate sun light. All lighting is controlled by zenon Supervisor in the hypermarkets where zenon SCADA is integrated and each dimming level can be monitored and controlled.

Dimming levels can be adjusted by use of a schedule, or by light levels directly in the hypermarkets. Retail stores are automated by using PLCs and contactors with user-configurable schedules.

Special Elnet MC Multifunction Energy meters were used for the project with the ability to monitor 12 feeders simultaneously using one meter. Not only energy values but also power quality values can be monitored – up to 12 three phase feeders, or 36 single phase loads.

## RESULTS

zenon Supervisor is one of the world’s most advanced SCADA systems. CarrefourSA decided to rely on zenon with its clear advantages when it comes to flexibility and communication efficiency.

## FAST FACTS

- ▶ Application:  
Energy Management and Automation
- ▶ SCADA software:  
zenon Supervisor
- ▶ Hardware:  
Elnet MC  
Automation panels  
PLCs, contactors etc.
- ▶ Benefits:  
Improved reliability of energy consumption data, remote control, improved accuracy, reporting and automated lighting.



ready for  
**ISO 50001**  
CERTIFIED



*Loads in the Carrefour supermarkets are scheduled automatically and can be controlled manually as required.*

Technical engineers can access the retail stores or hypermarkets remotely and have full control of the system from the SCADA server at their headquarters. Retail stores have automated control and hypermarkets have their own SCADA systems, where the main SCADA server is redundant to the hypermarket SCADA system.

Without monitoring you cannot be in control and have the ability to react efficiently. Therefore, having a central cost control system, CarrefourSA engineers can monitor their retail stores, compare the M2 consumption values and react at the retail stores where consumption of M2 kwh is higher than it should be.

Any energy saving investment can be monitored online and decisions can be taken when previous reference values are given. The project had been designed by SGE engineers who have integrated more than 30,000 monitoring tags in zenon Supervisor, giving 1 second updates on local servers.

CarrefourSA has invested in zenon Supervisor. The result of all their energy consumption optimization measures is extensive savings of more than 1.5MW per hour.

Save energy, go green!

### ABOUT SGE MÜHENDISLIK

SGE Mühendislik is a Turkish engineering company founded in 2007 by a group of engineers, having expert knowledge in automation, SCADA, energy metering, relays and RTUs. SGE Engineering is an exclusive distributor of various high-end products, always striving to meet the individual needs of their customers and offering advanced automation products.

### CONTACT

SGE Mühendislik Elektrik Otomasyon Bilgi İşlem Sanayi ve Ticaret Limited Şirketi  
 Tel: +90 216 481 43 62  
 Fax: +90 216 481 78 04  
 Web: [www.sge.com.tr](http://www.sge.com.tr)  
 E-mail: [info@sge.com.tr](mailto:info@sge.com.tr)