ECAS® - SYSTEM FOR CONTROL AND REPORTING OF ELECTRICAL ENERGY CONSUMPTION OF SUBSCRIBERS
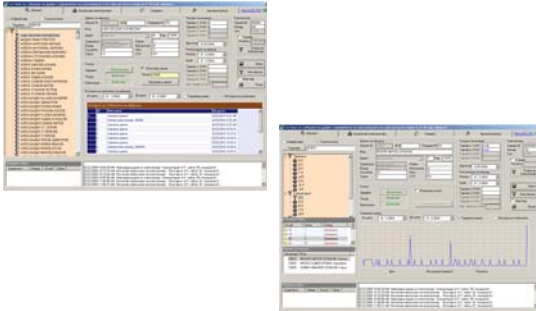

- ♦ **Automatic data reading**
- ♦ **Remote switching on/off**
- ♦ **Equipment status supervision**
- ♦ **Assignment of limits**

The accurate measurement of consumed electrical energy, the collection in due time and the accurate reading of electric meters' registers is a task where many difficulties are encountered. On the one hand there are technical problems related to the condition, maintenance and renovation of the stock of watt-hour meters. On the other hand are the problems of collecting, processing, analyzing and practical usage of the huge bulk of information. These numerous and heterogeneous problems are solved with the help of the developed by UNICOM Microsystems LTD modern, automated, data acquisition and control system ECAS, which had been implemented in Electric Power Distribution Company Stara Zagora, Sliven branch, region Nova Zagora.

The system for control and reporting of electrical energy consumption ECAS is a hierarchical data acquisition and control system on two levels – control post and distributed objects (power transformers' kiosks with the distribution network attached to them). The data communication between the levels is two-way and it can be realized via cable - twisted pair, low voltage power line, radio channel, GSM, wireless LAN, etc. The system may be implemented in stages and is fully operational even at the early stages of deployment. It is open and allows unlimited expansion of the number of points for measurement and control. The addition of new subscribers doesn't break the normal work of the already existing system. The system works with every kind of electric meter which has an output for remote reading. All devices that are included in the system are intelligent and allow the detection in timely manner of failures, attempts for unregulated consumption, etc.

Main functions of the ECAS system are:
- automatic, remote reading of the registers and status of the electric meters;
- remote switching on/off of the subscribers' electricity supply;
- supervision of the state of the equipment in the distribution panels and the way of exploitation of them by the subscribers;
- setting limits for electric power usage and disconnection when the set limit is exhausted.

ECAS has a lot of additional functions the most important of which are: possibility for introduction of new rates and change of existing rates, which allows flexible pricing; representing of the collected information in a user-friendly way, which helps in the analysis and decision-making; display of diagnostic, informative and warning messages, which makes the work with the system easier and its support cheaper; etc.

The system is established on a powerful technological platform, based on opened internationally recognized and accepted standards, that gives comprehensive possibilities for practical realization. The devices, which comprise the system, are with built in communication and self-diagnostic functionalities, which allows the regular on-site checks of the equipment to be replaced with visits only when it is necessary. The introduction in the system of additional rates allows the electric power distribution companies to adapt their pricing policies to the state of the market and would lead to even distribution of power consumption across the individual hour zones and to a decrease in the rate of failures due to instantaneous overloading. All this brings to a minimum the expense for keeping the distribution system in normal working condition.

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Background information

UNICOM Microsystems Ltd. offers digital measurement devices and control systems for process automation in the power generation, metallurgy and metal processing industries, electric and water distribution facilities etc.

Our products and services include:

♦ Single and 3-phase static watt-hour meters.

♦ Software and hardware for remote meter reading, processing of data and control of energy consumption.

♦ Industrial microprocessor based devices for measurement and boundary control of angular and linear velocities, difference between angular and linear velocities, micro-shifts, etc.

♦ Intelligent field input-output modules and other hardware and software components for building distributed control systems based on LonWorks® technology.

♦ Software and hardware for remote monitoring and control of unmanned sites.

♦ Universal switching AC/DC power supplies and DC/DC converters.

♦ Custom product development and manufacturing. Our fully integrated service includes hardware and software design, procurement, manufacture, test and control.

♦ Integration of distributed control systems. System architecture design and components specification, procurement of equipment and installation. Capabilities to configure and install third party LonWorks systems in Bulgaria. Field service and technical support, warranty and non-warranty repairs and hardware and software modifications.

UNICOM Microsystems Ltd. has a management system certified to be in accordance with the requirements of ISO9001:2000.