

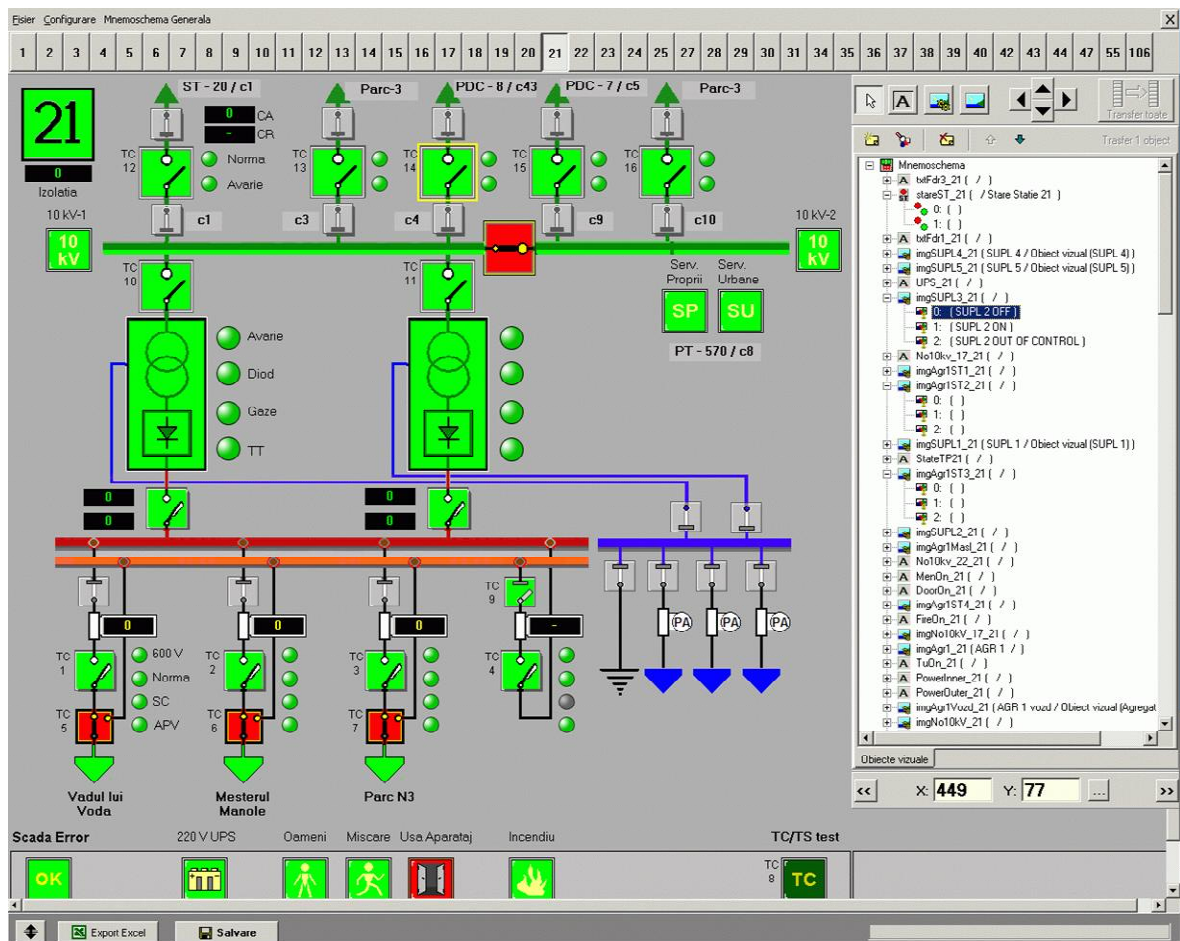


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SOFTCOM S.A.

SYSCOM-SCADA

Integrated Control System for Electrical Power Substations



Destination

The system automates processes of remote monitoring and management of electrical power conversion and distribution objects:

- ❖ transformer,
- ❖ distribution,
- ❖ traction power supply for electric transport, and other substations.

The system automates activities of central dispatching node and of a set of remote substations.

Area of application

The system can be used at the electropower enterprises having territorial distributed structure, for which the remote, operative, reliable, flexible management and supervision of technical state is required.

Example of successful use:

The SYSCOM-SCADA system is mounted, adapted "on turn-key basis" and is successfully exploiting at the "RTEC" enterprise - Electrical Transport Registry (Chisinau, Moldova) having municipal-level territory distributed structure. The system is used for dispatcher management of more than 40 trolleybus power supply tracking substations.

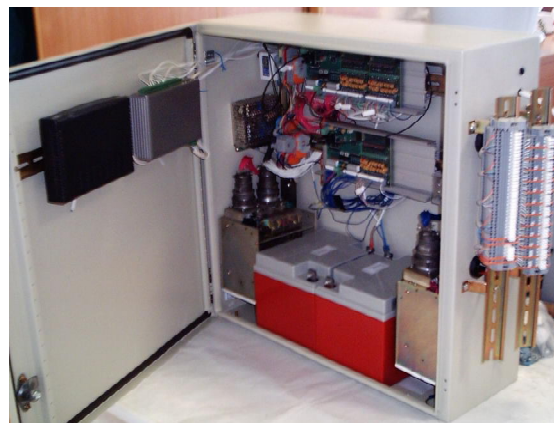
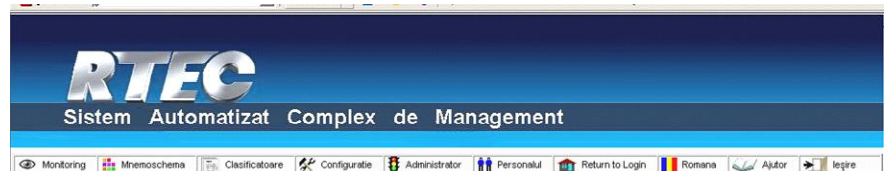
Technology

The system is implemented using client – server technology based on the platforms of modern servers (MS Windows, SQL Server, Internet Information Server, dotNET). Provides fast collection, processing and reliable storage of the technological data.

Friendly and intuitively understandable interface of the operator workplace makes system operations simple, open and accessible.

The local subsystems installed on remote objects contain intellectual components:

- High-reliable control microcomputer equipped with Windows CE OS, manages local database of the measured values.
- Intellectual Object Access Devices are equipped with distributed controllers that are connected to intellectual remote sensors, measurers and executive devices through field optical channels.

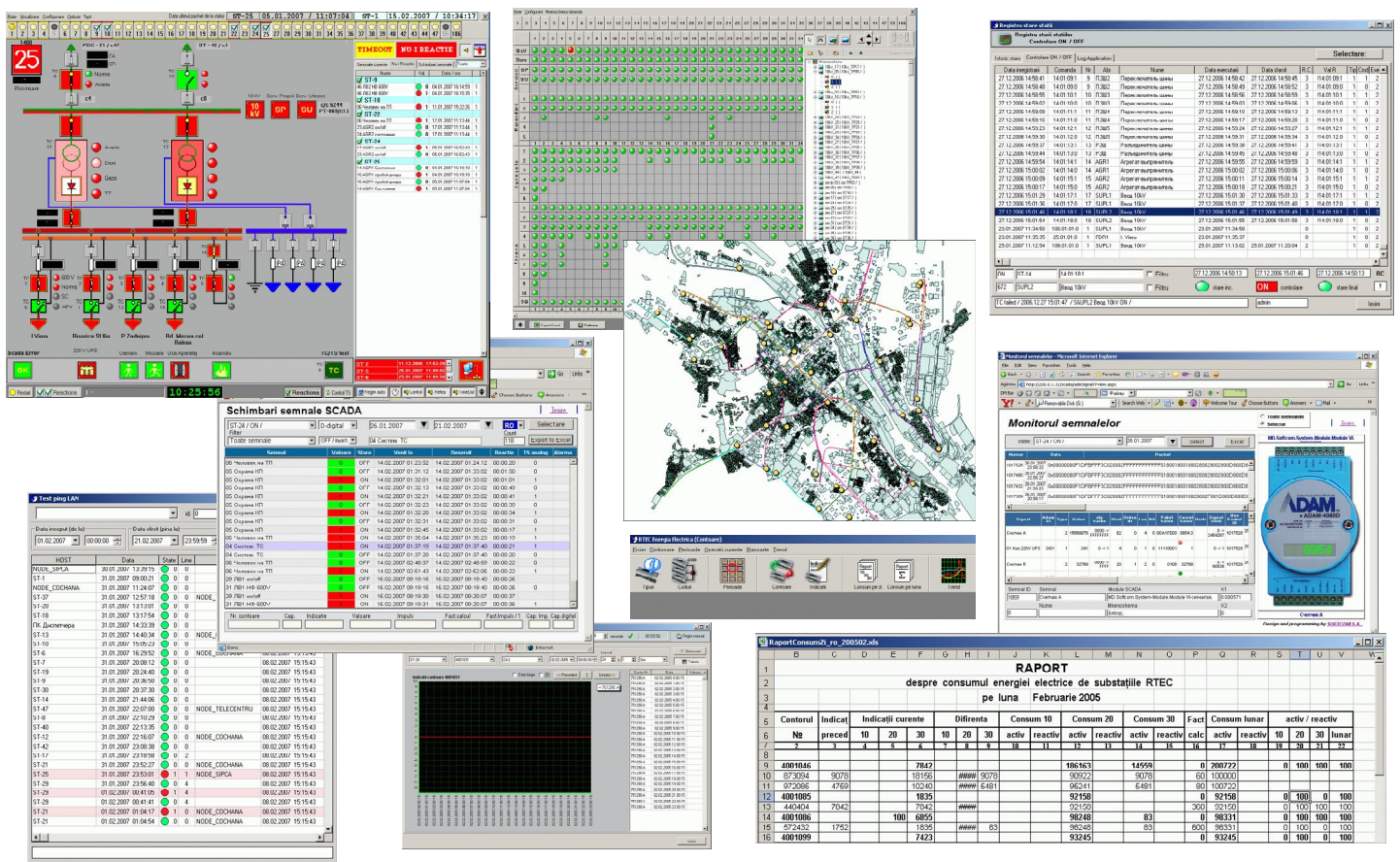


System characteristics

- Modern SQL-server based technology provides an opportunity of information acquisition and storage with a high level of reliability, protection against non-authorized access, strict differentiation of access rights to both data and resources depending on user status and its duties profile, simultaneous, reliable, regulated access to different data.
- Due to database use all necessary information is easily accessible by the employees of various departments and services, that allows to increase efficiency of decisions and to avoid duplication of data processing and storage tasks.
- System realizes recording of users actions, that permits to track and analyze the history of various events on each object for the long period of time and to reconstruct a complete picture of the changes, made by the users, and their consequences.

Main functionalities

- ❑ Centralization of automated management of a set of remote electrical power objects provided from the single dispatching centre.
- ❑ Flexible adjustment and detailed account of configuration of technical equipment of electrical power objects distributed on territory. Building of mnemoschemes of remote objects under management.
- ❑ Operative control, management and supervision of technical status of remote objects using graphic mnemoschemes and geoinformation support of:
 - Distant measurement
 - Distant control
 - Distant signaling
 - Security signal system for remote objects.
- ❑ Registration of distant measurement results and events in a database (electronic registries).
- ❑ Generation of operative and statistical reports, automation of release of the accounting records.



The system provides:

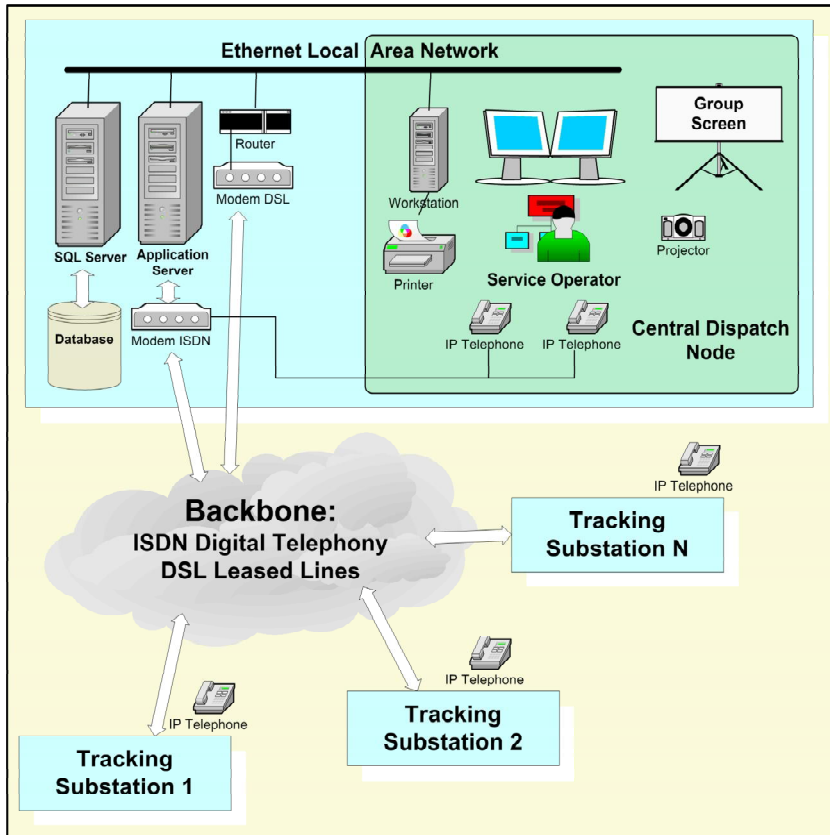
- Increase of economic and technical efficiency of the enterprise due to growth of efficiency and quality of management of objects. Shortenes of control stimulus preparation time. Increase of the efficiency of the information acquisition on current status of the equipment under management.
- Fast emergencies revealing and automated realization of countermeasures. Creation of effective malfunctions diagnostics and preventive maintenance system. Acquisition, storage and processing of the statistical data about quantity and types of equipment failures.
- The constant and complete account of a configuration of monitored and managed objects, all control, measurement and signal system events. Safety of the stored information. The control of access to services and data.
- Perfection of power consumption audit.
- Reduction of operational expenses.
- Scalability.
- Integration with information services and applications already existing at the enterprise.

Structure of system

System architecture uses advanced approaches and technologies to modern corporate industrial SCADA systems development.

System contains Central Dispatching Node (CDN) infrastructure, a telecommunications complex, and remote Measurement and Control Complexes (MCC) mounted on substations. CDN is equipped with database server, applications server, web server, communications server, geoinformation service, which serve workplaces of the on duty operators and engineers via local area network. The telecommunications complex provides high-speed, flexible and reliable data transfer together with voice communication based on IP-telephony.

The system is developed under modular principle, that allows to adjust workplaces functionality dynamically according to users professional assignments.



The MCC equipment installed on substations is assembled inside separate wall mounted case (600x600x250 mm). Single MCC unit allows to operate typical substation, having following parameters:

- Number of telesignals (TS) - 48 to 112, in groups by 16.
- Number of telecontrol (TC) channels - 8 to 32, in groups by 8.
- Number of analog telemeasurement (TM) signals - up to 32.

For large substations an optional case of expansion can be established, allowing to increase the number of required channels:

- TS - up to 340,
- TC - up to 72,
- TM - up to 96.

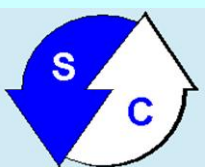
The TM signals are processed by separate remote ADC devices through optic fiber channels and interfaces.

The MCC equipment provides high reliability level – the MTBF exceeds 44000 hours (more than 5 years).

The MCC equipment contains a reserve power supply built-in battery providing an independent powering during more than 10 hours.

Advantages

- ❖ High level of reliability and quality based on both own-developed industrial hardware and software and provided by world-leading well-known firms.
- ❖ Flexibility and scalability, allowing to easily follow up objects under management changes.
- ❖ Friendly user interface based on dynamic mnemoschemes, electronic maps, reports generation system.
- ❖ Universal architecture of data transfer system.
- ❖ Effective realization and qualitative customer operations support due to high level of reliability and design technology.



Softcom S.A.

www.syscom.md

Decebal, 99
Chişinău,
2038
Moldova

Tel/Fax:
+373 22 56 33 06
e-mail:
cvv@syscom.md