INDUSTRIAL AUTOMATION AND BUILDING MANAGEMENT SYSTEMS

Techinservice® Intelligence

TECHINSERVICE INTELLIGENCE

IS ONE OF THE DEPARTMENTS OF **TECHINSERVICE**,
A LEADING ENGINEERING MACHINE-BUILDING COMPANY,
THAT DEVELOPS AND IMPLEMENTS INTEGRATED SOLUTIONS
AND SERVICES FOR AUTOMATION OF INDUSTRIAL
PROCESS FLOWS AND PRODUCTION FACILITIES,
AS WELL AS BUILDING AND INFRASTRUCTURE FACILITIES
AUTOMATION AND CONTROL SYSTEMS.

WE OFFER THE FOLLOWING SERVICES:

- Design, manufacture and implementation of turn-key automation control systems.
- Modernization of production processes and process management systems.
- Selection of all necessary equipment for the project.
- Assembly of switchboards and power cabinets.
- Installation, start-up and commissioning.
- 24x7 maintenance and support services for delivered solutions.
- Staff training.

OUR PRIMARY FOCUS IS THE FOLLOWING:

- Industrial automation
- Building management systems
- Infrastructure facilities management systems.

Techinservice®
www.techinservice.com.ua

UKRAINE
1, Makiivskyi Provulok, Kyiv, 04114
Tel./fax: (+38 044) 468-9311, 464-1713
e-mail: net@techinservice.com.ua

RUSSIA
1, Marksistskaya Str., Moscow, 109147
Tel.: (+7 495) 937-7980, fax: 937-7981
e-mail: info@techinservice.ru

INDUSTRIAL AUTOMATION

Mounting of switchboard for boiling house automatic control system

Vacuum pan control system

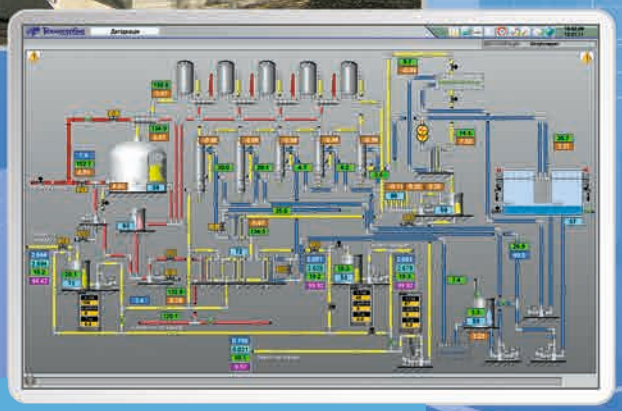
Main operator's room at Gaysyn Sugar Plant (Ukraine)

SUGAR INDUSTRY

SimpleSug™ is a registered trademark of **Techinservice**. It is a complex of software tools for automation of sugar production process, which includes modules for all and every station of sugar production plant:

- **Vulkan** (automatic control system for lime kilns);
- **Lybid'** (automatic control system for extraction section);
- **MorningDew** (automatic control system for purification station);
- **Titan** (automatic control system for filters);
- **Corason** (automatic control system for evaporation station);
- **Topaz** (automatic control system for boiling house).

Ethanol dewatering station (fuel bioethanol production)



Mnemonic diagram of ethanol dewatering at alcohol dehydration station (Ivashkovskyi Distillery, Ukraine)

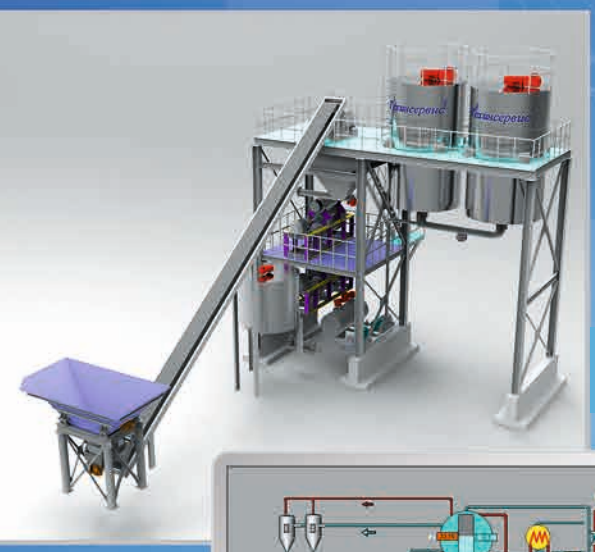
BIOETHANOL INDUSTRY

In 2009, **Techinservice** designed and started-up the first in Ukraine spirit dewatering station, which was fully automated by means of **Unaqua™**, a unique ethanol dehydration control system developed by own automation department **Techinservice Intelligence**.

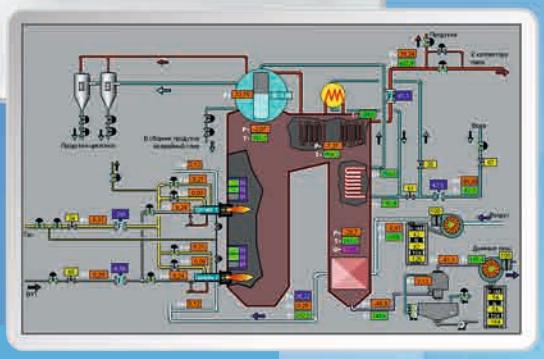
Distinctive features of Unaqua™ software component from similar ones:

- dehydration process is carried out in fully automatic mode;
- high level of fail-safety (i. e. the control system continues functioning eve after failure of some devices);
- knowledge base of emergency situations for the station, which allows the system to properly respond to any emerging situations;
- convenient visualization on the basis of SCADA system for the station monitoring and control with a user-friendly interface, which allows the operator to monitor the whole working process, control the functioning of operating mechanisms, save databases, review real-time and history trends, export statistics, integrate data, signal about any deviations of process parameters from preset limit values, equipment's condition and to carry out statistical analysis.

INDUSTRIAL AUTOMATION



CWF preparation and burning plant



CWF burning plant control system

ENERGY (BOILERS TRANSFER TO CWF BURNING)

Techinservice elaborated a coal water fuel (CWF) preparation and burning technology based on its own patented muffle burner, which allows burning two types of fuel in the boiler (gas and coal water fuel) both separately and mixed. Moreover, **Techinservice Intelligence** developed an automatic control system for coal water fuel boilers, which records polluting emission volumes, characteristics of exhaust gases as well as other characteristics of the combustion process. Based on the mentioned data the automatic control system regulates a fuel duty, boiler operation, etc., which ensures its optimum performance.

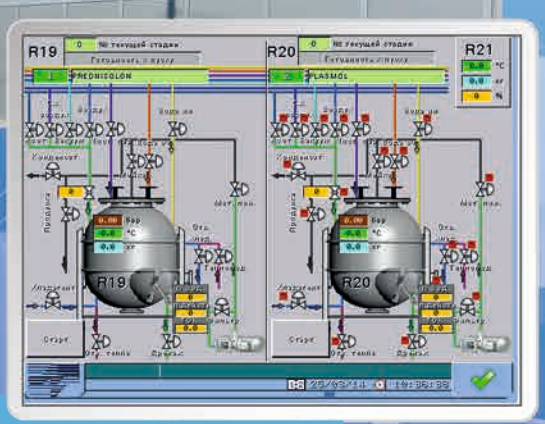
The CWF boiler control system features the following:

- controlling the gaseous fuel combustion process;
- controlling the coal water fuel combustion process;
- adjusting a fuel-air ratio depending on the O_2 level.

This control systems ensures the following:

- process flow monitoring;
- monitoring of process variables;
- control and analysis of preset working procedures;
- data visualization and registration;
- generation of reports and summaries;
- data storage.

New Biofarma Pharmaceutical Plant (Ukraine)



Mnemonic diagram of reactors control system at Biofarma Pharmaceutical Plant

PHARMACEUTICAL INDUSTRY

Techinservice Intelligence develops integrated automatic systems with process control and building infrastructure management for pharmaceutical enterprises.

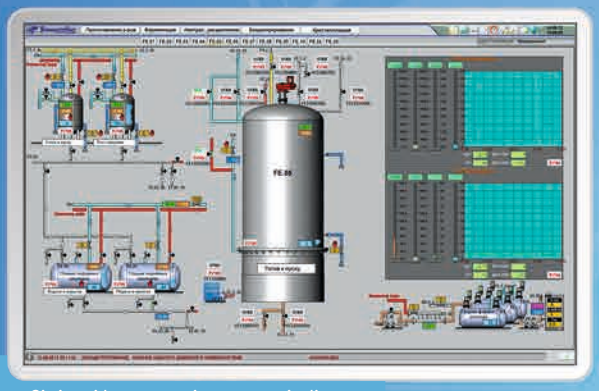
The building management system continuously collects data from primary sources (temperature and pressure sensors, etc.), visualizes it in a user-friendly style, stores and records abnormal deviations of parameters.

The automatic control system continuously monitors and manages production process sections and building services.

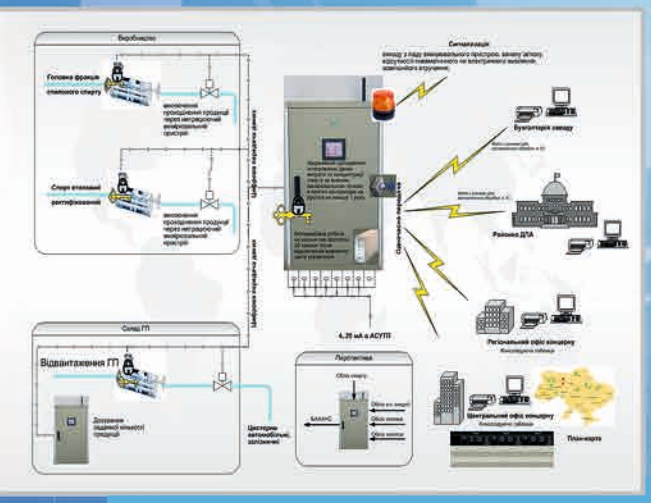
The solutions proposed for the pharmaceutical industry feature such key advantages as elimination of the human factor in the controlled process, staff optimization, minimization of raw material consumption, improvement of the end product quality, and finally the substantial increase in production performance.

INDUSTRIAL AUTOMATION

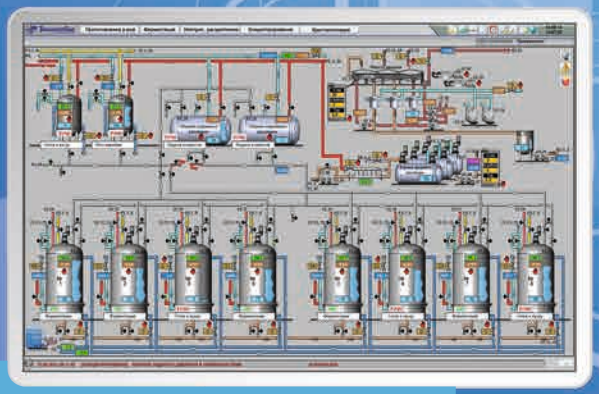
Oprator's room at Skidel Sugar Factory (Belarus)



Citric acid concentration mnemonic diagram



SEOS – electronic ethanol-containing products management system



MTBE production control system mnemonic diagram

CITRIC ACID PRODUCTION

Production of citric acid is a peculiar mixture of food and chemical industries in terms of process technology. That's why the creation of automatic control system requires only professional approach to tailoring both automatic tools and control algorithms used.

Techinservice Intelligence developed a comprehensive control system for production of citric acid from sugar molasses – from feeding initial feedstock up to citric acid crystal centrifugation. This control system can be conventionally divided into the following substations:

- preparation of main, feeding and salt solutions;
- preparation of air and compressor room;
- fermentation and separation of mycelium;
- neutralization and splitting;
- citric acid concentration;
- crystallization and centrifugation.

These sections are automatized by means of a distributed structure of controller, drive and computer equipment. The whole system is connected by Ethernet and Modbus Plus industrial field networks, which ensures a high level of reliability and operability.

ALCOHOL INDUSTRY

Clever Flow™ is an electronic ethanol-containing products management system developed for installation at alcohol plants as a basic tool for metering consumption and concentration of ethyl alcohol. This system features a multilevel security mechanism, which protects it against unauthorized use. The system simultaneously transmits data to the plant accounts department, regional and central offices of the managing company as well as to the district state tax authorities.

CHEMICAL INDUSTRY

Automation in chemical industry requires a great deal of attention as chemical technological processes are characterized by high speed and sensitivity to deviations from preset modes, hazards of working area as well as by explosiveness and flammability of treated materials.

The automatic control systems implemented at chemical enterprises are widely used to optimize their basic performance, namely:

- staff safety level;
- compliance with quality standards;
- environmental protection.

The introduction of industrial automation in the chemical industry helps to reduce production costs and maximize production efficiency, increase output, with both continuous and batch processes.

BUILDING MANAGEMENT SYSTEMS

The building management systems designed by Techinservice Intelligence have the following economic advantages and benefits for our clients:

- energy resource saving (electricity, heat, water, gas);
- decrease of service staff number;
- reduction of costs for maintenance, repairs and replacement of utility equipment;
- damage reduction through prevention and early detection;
- increase of process equipment service life due to record of operating time and steady warn-out;
- service contract cost-cutting due to the drop of works volume thanks to continuous monitoring and recording of equipment working condition;
- improvement of building systems' reliability thanks to the use of automation tools from a single vendor;
- system flexibility for future expansion;
- multiple object networking possibility;
- easy-to-understand, easy-to-use, deskilling effect;
- possibility to meet energy limits;
- fast troubleshooting;
- increase of the comfort and safety level inside the building.

HOTEL COMPLEXES

Maristella Hotel Complex (Odessa, Ukraine)

BUSINESS CENTERS

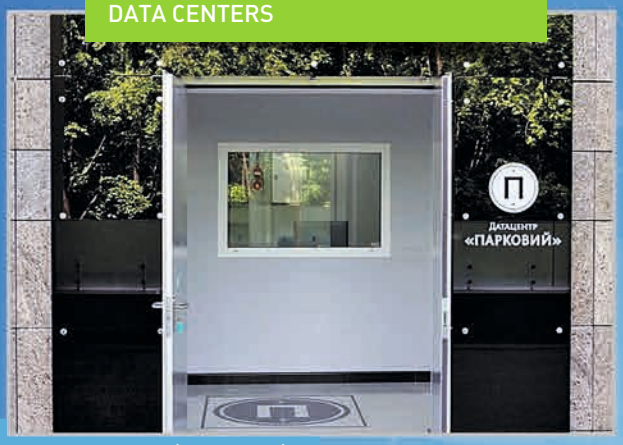
IQ Business Center (Kyiv, Ukraine)

SHOPPING & ENTERTAINMENT CENTERS

Ocean Plaza Shopping & Entertainment Center building management system mnemonic diagram

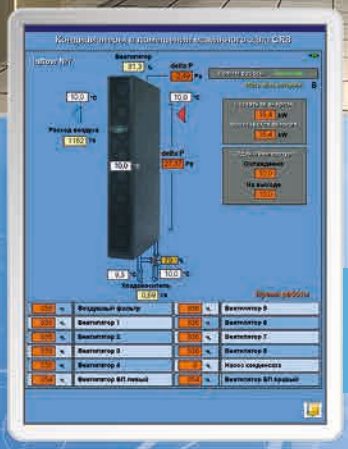
INFRASTRUCTURE FACILITIES MANAGEMENT SYSTEMS

DATA CENTERS



Parkovyi Data Center (Kyiv, Ukraine)

Control room of Parkovyi Data Center



Mnemonic diagram of conditioner operation control system in Parkovyi Data Center

DeNovo Data Center control room operation mnemonic diagram

Data center infrastructure management system is a centralized system for workflow management, which features the following key functions:

- collection of data from sensors reporting process parameters under control;
- rapid exchange of information with autonomous local control systems for monitoring data center equipment and process flows;
- processing and displaying the received information;
- graphical representation of the process flow status and basic equipment condition as well as received and history information in readable form;
- creation of alarm history containing data from the beginning of such alarm (automatically activated when respective settings switch on);
- logging of events connected with the controlled process and actions of the personnel responsible for system operation and maintenance;
- alerting operations and maintenance personnel about occurred emergency events connected with the controlled process and data center software and hardware functioning , with logging personnel actions in emergency situations;
- drawing up summaries and other reports on the basis of historical trends;
- providing recommendations to the operator both in emergency and routine switching modes; interactive advisor that helps the operator to take proper decisions in emergency situations in order to find and localization of fault locations;
- changing jobs (limits) for local control systems by duty power or mechanical engineer;
- changing the equipment status (on/off, open/close) from workstations of duty power or mechanical engineer;
- electric supply billing of enterprise: maintaining a database and automatic billing system for electricity consumption and energy sources, multi-level pricing and preparation of invoices;
- auditing power supply, power consumption and heating and cooling systems;
- calculation of resource consumption rates.

TECHINSERVICE INTELLIGENCE® CAN BOAST OF MANY DISTINCTIVE FEATURES IN ITS APPROACH TO AUTOMATION OF DIFFERENT FACILITIES, NAMELY:

- in-depth and comprehensive analysis of automation object;
- application of only proven solutions as well as looking for out-of-the-box and adaptive solutions for successful implementation of projects;
- widespread use of network technologies for connecting stations at the facility as well as for connecting controllers with frequency converters and SCADA-systems;
- creation of reliable, noise-free and fail-safe network structures;
- use of multi-server SCADA-systems based on industrial computers;
- continuous communication with control objects over the Internet.