



**System integration and
Industrial automation**





01 Systems of Industrial Automation

The core profile of “IA Systems” Company is designing and complete turnkey furnishing of industrial automatization systems. The Company aims at being in conformity with leading global standards, established in this sphere, as well as at being client-oriented. The Company experience proves that works on developing and creation of automated process control systems (APCS) have to be carried out in the format of constant contact with the Customer. On the initial stage this allows to define the place of new system in the hierarchy of Customer’s business-processes, as well as more specifically to determine tasks, solved by designed system.

Company Services in the Sphere of Industrial Automation:

- Pre-design analysis of object for Automation
- Technical Specification writing in APCS in compliance with State and International standards
- Development of technical project and construction documentation of APCS in compliance with State and International Standards
- Realization of APCS program and hardware constituents
- Construction and installation
- APCS certification in supervision agencies
- Commissioning and putting system into operation



The main advantage of “IA Systems” is the development of complete turnkey furnishing Systems of Industrial Automation, starting with examination of object for Automation and technical specification writing and finishing by putting the system into operation and certification in supervision agencies. For our Customers’ convenience we fulfill delivery, assembly and installation of all required equipment and communications.

Implemented Projects:

APCS of dry mixes for building and construction works



The developed System solves the following tasks:

- Control of the whole production cycle of dry mixes for building and construction works
- Control of packaging and laying into racks
- Management of different manufacturing complexes of various manufacturers
- Integration with APCS 1C

APCS of Sulphuric Acid Catalysis Unit at Petroleum Refinery



Within the framework of this project APCS ensures the following functionality:

- The operation control of heat elimination unit of sulphuric acid catalysis unit
- Warning protection system
- Integration with control systems at the level of Petroleum Refinery control/management



02

Marine Systems

One of the main "IA Systems" activity spheres is the development and delivery of marine control systems. Several directions can be pointed out:

- Special-purpose control systems
- General control systems of technologies and warning protection system
- Switchboard equipment

The delivered systems have gained acceptance and have Certificates of the State Marine Register of Shipping.

Implemented Projects:

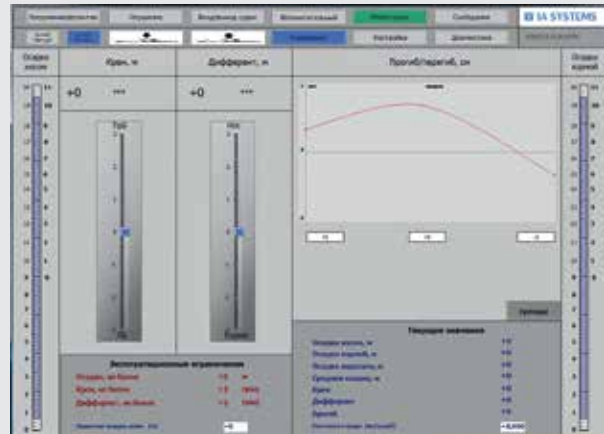
Overall Control System of ballasting system of floating ship repairing dock (OCS BSD)

This system is designed and developed for controlling the ballasting system of floating ship repairing sea-based dock. OCS BSD ensures direct digital control of dock sinkage and surfacing from one operator's post.

OCS BSD ensures the following functionality:

1. Management, continuous control and indication of:
 - Ballast pumps and valves states
 - The level, volume and weight of water in ballast compartments
 - The draught line of dock
 - Dock lurch value and different
 - Ship's position at docking with the help of laser rangefinders
 - Condition of hydraulic control systems
2. Monitoring of dock state
3. Control of dock sinkage and surfacing in automatic and manual modes
4. Video monitoring of sinkage/surfacing and vessel call to dock

OCS BSD reliability is assured by the means of hardware redundancy. OCS BSD is certified by Russian Marine Register of Shipping.



Control System of Ship Technologies and Warning Protection System (CSST WPS)

Control system of ship technologies and warning protection system is designed for centralized control of ship technologies and alarm of emergency situations.

The main advantage of the system, which is proposed by "IA Systems", is its modularity and good integratability, which allows to use the developed CSST WPS for the wide range of sea and river ships.

The proposed system also allows connection to control systems of third party manufacturers (for ex.: control system of diesel installations) with the usage of open and proprietary protocols. This makes possible control of all ship systems and mechanisms from one centralized post with the help of touch screens.

In general, CSST WPS is used for monitoring and control of:

- Electrical installations (EI)
- Ship's service system (SSS)
- Auxiliary mechanisms (AM)



03

System Integration and Software Development

Within the framework of this direction our company offers the following services:

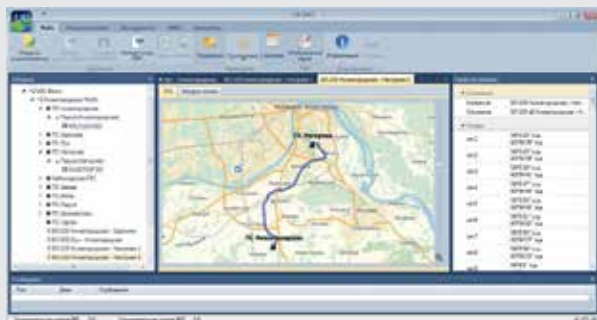
- Audit and upgrading of IT-infrastructure;
- Concept development for Automation of enterprise business-processes;
- Selection of ultimate solutions for business-tasks realization;
- SW maintenance at all stages of its life cycle.

Implemented Projects:

Software solution of support for decision-making and damage location at accident elimination on power transmission line 110-500 kV (PTL)

This software solution is intended for dispatch personnel usage and it solves the following tasks:

- Data collection from incident detectors, which are installed at electrical substations 110-500 kV
- Analysis of emergency and pre-emergency modes
- Calculation of the possible damage area and displaying the damage area on the geographical map
- Integration with the auxiliary systems of collection and technological information transfer
- Information presentation with the help of embedded geographic information system (GIS) concerning substations location, electricity transmission lines, maintenance team and service equipment
- Support of oscillograph trace of all formats, including COMTRADE standard
- Distributed client/server architecture and support of simultaneous operation of great number of users

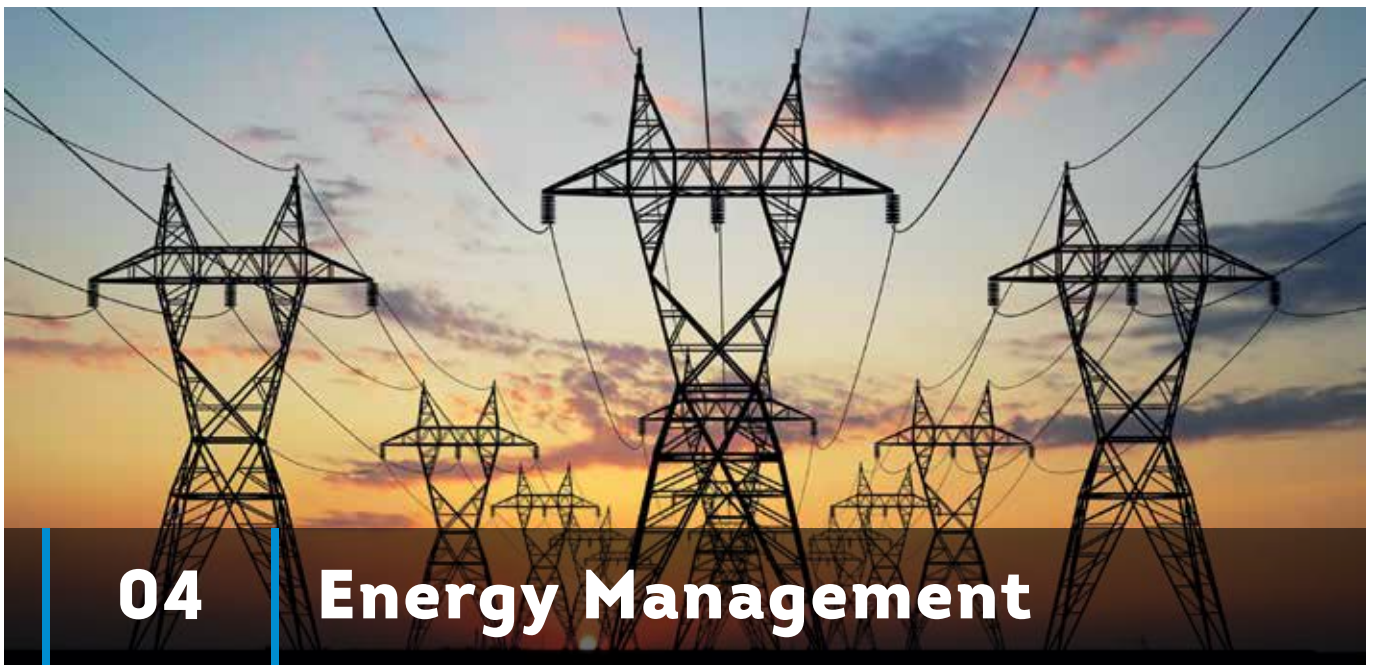
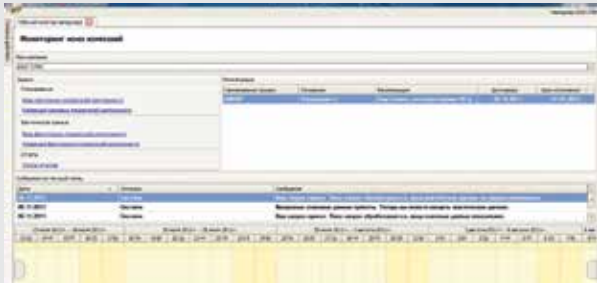


Payment Process Systems for Payment Kiosk

Auxiliary Systems for Dispatch Control in Power Engineering

Distributed Systems for Investment Project Management

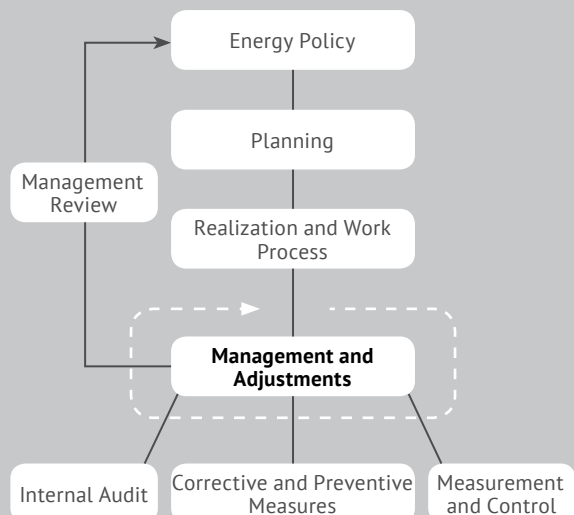
Bank Payment Platforms



During the last several years more and more industrial enterprises start to think about optimization of energy consumption. It has several reasons:

1. Requirements of Federal law "On energy saving and increase of energy efficiency" and State Program of Russian Federation dd. 27.12.2010 №2446-p "Energy saving and increase of energy efficiency for the period till 2020."
2. Price increase for energy materials.

"IA Systems" Company provides services in designing, developing and implementation of Energy Management Systems in accordance with worldwide standard ISO 50001:2011 "Energy Management Systems – Requirements with Usage Manual"



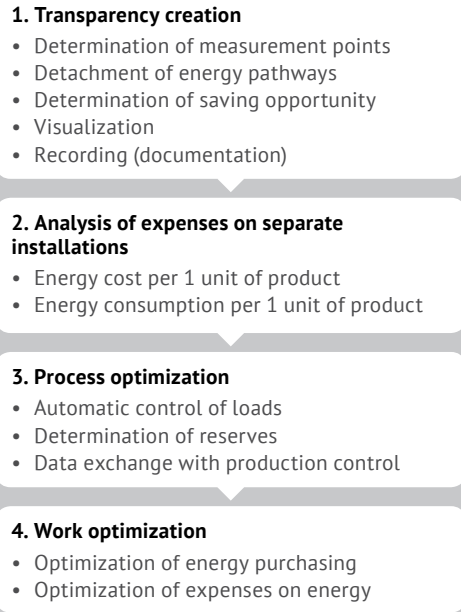
Certification in accordance with ISO 50001 Standard presupposes:

- Cuts in expenditures
- Possibility for participation in tenders
- Increase of company competitive ability
- Decrease of environment pollution
- Strengthening of company brand image.

Depending on enterprise equipment capability our company offers the implementation of energy management system in several steps:

1. Collection and presentation of information concerning energy consumption:
 - Installation of energy meter in the places of final consumption;
 - Integration of Energy Management System with Automatic system for commercial accounting of power consumption.
2. Analysis of the collected information and calculation of key parameters of efficiency.
3. Optimization of energy consumption and procurement.

CONTINUOUS IMPROVEMENT PROCESS



4. Development of algorithms of load transfer, reserve calculation of energy and forecast of energy consumption. Data exchange with MES.



Within the framework of APCS for general purpose and for marine systems “IA Systems” Company carries out designing and assembly of switchboard equipment on the own production facility:

- Production equipment control stations on the basis of soft starter and frequency converter;
- APCS switchboards;
- Switchboard control stations according to Customer’s documentation;
- Electrical Control & Instrumentation switchboards according to Customer’s documentation;
- Electrical distribution panel.

Company carries out development, integration and support of information systems and infrastructure solutions on the basis of leading global producers' technologies and equipment and provides consulting services on the projects. Professional vision and understanding of Customers' requirements, perfect peculiarity knowledge of different branches help our specialists develop and adapt advanced information products with an account of current and future Customers' requirements, apply innovative approaches to business-process automation, as well as solve complicated algorithmic tasks, which appear on the stage of information system development.

Company special feature is the creation of information systems on turnkey basis. Unlike the other companies we do not require any detailed technical specification from Customer, but we prepare it during collaboration by the way of analysis of requirements and as a result we offer the most efficient solutions. The application of flexible project management procedures allows us to make solutions and products of high-quality, which our Customers use successfully in order to increase economical efficiency and to optimize business-processes.

There are 2 main tasks in front of our Company, which we work on every day:

1. Development of products and services of high-quality in accordance with leading global standards and experience;
2. Maximum satisfaction of our Customers' interests.

We consider that only successful solving of these tasks is the only development path for Company in the modern, dynamically developing world of high technologies.

Attention and concernment in satisfaction of Customers' interests is the central core of our specialists' work.

All works, done by "IA Systems", are carried out in accordance with State and International Standards and requirements of regulating authorities in the sphere of information and industry systems.



SIEMENS

Schneider
Electric



"IA Systems" Company is the participant of Siemens affiliate program.

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