

ABOUT CONSORTIUM

The consortium "RUBIN-AUTOMATION" consolidates professional experience of key specialists in the field of automated control systems.



INVESTIGATION



DESIGNING
AND INSTALLATION



MONITORING
UTILITIES



UTILITIES



SCIENCE
AND EXPERTISE



TRAINING
AND PROFESSIONAL
DEVELOPMENT



a pool of scientists, experts, designers, practical engineers, highly skilled workers as well as specialists in various fields of expertise connected with issues of providing effective control over automation objects.



An engineering centre engaged in a wide range of projects and services from making draft proposals, designing and coordinating the project appraisal to actualizing and maintaining automated systems.

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CONSORTIUM RUBIN-AUTOMATION

*Professional solutions
– basis for development!*



**Automatic Process Control System (APCS)
for soil-reclamation canals**



Control-objects

Soil-reclamation (irrigation) canals including: water storage reservoirs, water intake and fish-protecting facilities, sedimentation basins, pumping stations, irrigation, storage-waste and drainage networks, interception drains, irrigating and sprinkling machines, objects of power supply and communication, erosion protection works.

Goals-of-introduction

- Ensuring reliable control over reclamation condition of land and quality supplying with water designed for agricultural and domestic needs with minimal operating costs.

System functions

- Presenting an electronic model of the soil-reclamation canal with visual representation of production facilities linked to the locality plan.
- Collecting, processing, archiving data on pumping units operation: temperature of bearings and coolant, rotor and stator current and voltage magnitude, vibration, power and electric energy consumption, operating modes.
- Collecting, processing, archiving data on the level in the canal and the volume of pumpable water.
- Detecting, logging and warning about deviation of parameters from the preset limits.
- Calculating average cumulative total water discharge for each pumping unit, total delivery value.
- Warning lights and audible warning in case of parameters deviating from the preset warning and precrash limits.
- Manual input of initial data in real time.
- Automatic regulation of water supply and its levels in canals.
- Assigning access right to the system using passwords, logging the person's access and its actions.
- Automatic generation and printing of the system event log.
- Displaying information on the status and operability of the APCS components, diagnostic troubleshooting of its elements.

System features

- Supplying personnel with exhaustive on-line and archival information on the system operation such as water levels upstream and downstream of the canal between transfer pumping stations, operating modes of each pumping unit, power consumption, electric energy consumption, etc.
- Automatic calculation of engineering-and-economic performance indicators on the basis of on-line and retrospective information: pumping stations running time in general per hour, per day, per month, etc. An option to timely schedule and perform routine maintenance, to prevent emergencies.
- Significant extension of time between repairs and maintenance, increasing the equipment life time.
- Ample opportunities for control over the process allow, for example, choosing the required pivoting of pumping units blades and thus providing the optimal water supply mode.
- Using wireless communication facilities for water utilities geographically dispersed objects: radio communication and/or GSM. There is an option of a combined method of data exchange when the radio channel is reserved by a GSM channel

Components

- Programmable logic controllers DevLink®-C1000 located in control cabinets.
- Dispatcher's AWS, operators' automated workstations on the basis of SCADA KRUG-2000®.
- Dispatcher's console on the basis of commercial furniture of ConsErgo® series.
- Radio modems.

Implemented projects

- Municipal Enterprise "Gorelektroset", Zheleznogorsk, Krasnoyarskii Krai.
- "Aqtau international commercial seaport", Kazakhstan.
- "Zhayyk Zharygy", Uralsk, Kazakhstan.