

SMART CONTROL SYSTEMS FOR ENERGY



Monitoring and management of Urban Lighting :



The adaptive control of lighting levels depending on weather situation and day light, can reduce the energy consumptions.

Our innovative system of light control improves not only the power consumptions by giving a dimming setpoint to the system of power control but also the maintenance and the safety efficiency.

Hydro Power Control :



Remote control of hydro power stations through specific software installed on a local touchscreen panel. A system of cameras for video control can be connected to the system for a realtime monitoring from whatever terminal equipped by a web navigator.

All the data can be sent to a remote server for a distant control.

Stations of GSM antennas :



Remote control system for all the devices used in the systems of power supply for GSM stations: batteries, photovoltaic modules, diesel generators, environmental sensors and auxiliaries.

All the data are stored and can be visualized from whatever place through a simple Web connection.

Remote control and monitoring system for diesel generator :



Supervision of plant conditions, alarms and outages. Display of total output and main running data of gensets (automatic reports and display of trends of production).

Supervision of process data (voltage, current, frequency, pressure, temperature) together with all the other devices of the power plant: ventilation facilities, lighting, gasoline or diesel tanks, etc.

Energy management for industrial sites :



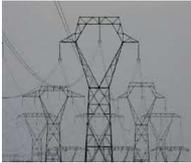
Our remote control systems are suitable for all types of supply and distribution networks, such as electricity, gas, water, district heating networks, for remote control in industrial applications and for the management of buildings. Due to their compatibility with most of the industrial systems, our programmable controllers and our sensors represent the optimal and most economical solution for all the tasks of remote monitoring.



Building remote control :

Connecting our monitoring system at all the control devices of the building for the :

- management of electrical power by switching the electric loads
- monitoring of technical alarms
- management of heating and cooling systems
- monitoring of technical units of protection against fire and intrusion



Remote monitoring of energy :

Unlike traditional communication solutions, our approach here is to have a communication controller in the base station that can support diverse choices of communication media (dial-up, RS485, Ethernet, and radio).

This controller can acquire all the electric datas through our AC and DC transducers (voltage, current, power, energy, etc.) and the datas of central power units can also be acquired from analog or digital inputs or from fieldbus.

This open approach facilitates a cost effective implementation.



Smart monitoring system for electrical bicycle :

Design and construction of a control system for the charge of lithium batteries and energy monitoring in order to optimize the control of electric bikes participating at the famous SunRace.

All the data of the different devices (available energy stored in the batteries, power of PV modules, power of electric engine, remaining autonomy) are stored on a SD-card and shown on a graphic display for informing the racer.

SMART CONTROL SYSTEMS FOR ENVIRONMENT



Monitoring of environmental data in quarry and mining :



Control of environmental data in quarry sites through a network of sensors to fight against the pollution with the objectives to :

- measure the environmental impact of production activities
- reduce the rejection of pollutants and wastes in the nature
- optimize the operation of equipments for the waters treatment
- reduce the high levels of noises, vibrations and dust,
- improve the quality of water rejected in nature
- write automatic reports to reply to the obligations of informing the local residents

Central monitoring of weather data for remote sites :



Our monitoring system is designed for multi-site weather applications. Hundreds of sites and weather parameters can be controlled and monitored from one location. All the data can be collected through weather sensors connected to gateways pushing the information to a web central platform. All the existing systems of transmission can be used (telephone, GSM/GPRS modem, spread spectrum radio, short-haul modem, Ethernet device server and/or Wi-Fi device server, satellite) and data can be processed by the data control server.

Monitoring and permanent self-diagnosis for sewerage :



Development of control system for the permanent measurement for :

- understanding the operation of sewerage network
- reducing the pollution discharges into the natural environment
- optimizing the operation of the treatment installations

Services rendered by the system :

- measurement of the flows in sewerage in function of the weather events
- evaluation of the efficiency of the technical interventions
- alarms broadscating/reporting/warning when an event appears
- help to the maintenance of sewerage

Remote Pumping Stations



Our Internet based monitoring and control system offers a new way to control, monitor and improve the efficiency of the pumping station and all the lift station equipment. The system was designed to be an integrated, fully automated, control and monitoring solution. It is suitable for use as a stand-alone system or for incorporation into existing systems.



System of prevention against the flood risks :

Monitoring control of the water level by collecting the data coming from height sensors. All the data acquired sensors are sent through radio modem to a gateway in direction of central server with the target for triggering sirens alarms to avert people against the flood risks.

All information of different watersheds are collected and stored on a central server to be read via the Internet.

GSM controller for remote command of irrigation pumps :



Our remote GSM based controller system allows farmers to control their irrigation pumps directly from their mobile phones.

Most irrigation installations need for the farmers to control the open and the close of the manual hatches throughout the irrigation canals. However, most installations in Africa receive an erratic supply of electricity. If the electric power is cut-off, farmers must wait the comeback of electricity and must go back to the station for switching on the startup of pumps.

As a result, without our system, farmers would have to travel great distances to operate their pumps through difficult terrain. Our system allows them to prevent fatigue, to save time and to remain informed about the operation state of pumps.

SMART CONTROL SYSTEMS FOR HEALTHCARE



Remote monitoring and control of medical gas storage :



Monitoring and control of medical gas storage by collecting the data of temperature and pressure sensors. Our system allows to monitor the consumptions of gas and to avoid interruptions of delivery of gas for the hospital.

The system is built around a smart controller connected to a mini Webserver allowing to the technical agents to be informed all the time anywhere inside the hospital.

After, all the data for each hospital are collected to a datacenter which controls in real time the state of health of all the installations.

Control the distribution of medical gas :



Control and monitoring of medical gas distributed in the operating rooms. Our smart controller uses the latest advances in information technology and is unique for its characteristics. It monitors and centralizes a large number of parameters coming from the sensors installed on the equipments. It allows to store and to access the memory of the most recent failures, so it delivers a real traceability of all events occurring on the installation.

Of course, the data of all controllers can be centralized in a Webserver through different ways of communication flows (radio, Ethernet, GSM, etc.) for broadcasting the information towards the personnel responsible.

Pilot and remote control for medical gas compressors :



Our controller ensures the driving and monitoring of the vacuum pumps as well as the air medical compressors. All the parameters of production are stored and monitored to ensure the best security and the best production of medical vacuum or air. Our touch-screen controller provides a perfect control unit for a suitable operation of a medical air plant. The device can be remote monitored through a possible connection to a Web gateway and the data can be stored on a local USB key or on a SD memory card to ensure a perfect traceability of all the events.

Prevention against the risks of legionella :



Our solution provides an analysis of water hygiene and Legionella bacteria in order to help the prevention of Legionnaires' disease.

It enables a comprehensive overview and constant monitoring of facilities. It helps the managers to reply to their legislative requirements through a solution facilitating real-time risk assessments.

The software includes a powerful database fed by information coming from temperature and debit sensors. These measurements are presented as an electronic graphic for informing about the risk assessment.

Our solution is web-based on a secure platform and the information can be accessible from wherever there is an internet connection from any PDA, Smartphone or terminal.

Controller of water chlorination :



Our controller is the essential part of the system for treatment and disinfection of water designed for our customer. It has been especially designed for providing a high reliability. Our smart controller presents a very robust design to support the chlorine fumes and the high temperature, it presents a minimum maintenance and displays on a LCD screen all the essential information of the system: installation failure, alarms, too high temperature warning, indication of presence of voltage, indication of end of preparation of water treatment.

SMART CONTROL SYSTEMS FOR INDUSTRY



Controller for balneotherapy facilities :



This is a type of equipment that puts together a whole range of devices and stimulations arousing senses and energies. It controls a full range of functionalities such as chromotherapy, aromatherapy, musictherapy in order to propose a huge variety of high quality treatments. All these stimuli are orchestrated according to programmes included in our controller by managing several devices :

- the colours, through a range of luminous atmospheres controlled from intensity and frequency of LED,
- the sounds, through a sound distribution through space and water,
- the fragrances, through a set of diffusers of essences,
- the touch, through an precise regulation of temperature water and pumps.

All the different programmes can be stored on SD card or on USB key pluggable into the controller.

Controller for label machines :

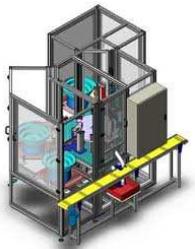


The high capacities of Sirea's controllers allow to propose very cheap and efficient solutions for the control of machines needing very fast times of calculation and reaction. Our embedded software is specially designed to deliver the greatest efficiency and the best performances.

In the case of label machines, these functionalities bring a very interesting solution instead the conventional PLC.

Our range of innovative and modular controllers allow to our customers to conceive and to make label machines intended to become integrated into the chains of traffic jam, in the lines of conditioning of food-processing industries, the chemistry, and the cosmetic.

Controller for assembly machine :



There where it's necessary to bring a low cost solution, high speed capacities of treatment and storage, large range of modular inputs and outputs, reliability and strong experience in automation, the Sirea's controllers provide a cost-effective solution compared to the conventional programmable logic controllers.

The controllers of Sirea are largely used in different industries such as those using wood machines, cutting stone machines or assembly machines for automotive.

Measurement of efficiency and production of textile machines :

By connecting the main data of the textile machines implanted on a line of production, the manager can measure in real time the efficiency and the global productivity of its manufacturing for each machine.



The proposed solution is composed of several controllers which send their data by radio to a central software. This software includes a powerful database where the data are presented as electronic graphics providing to the manager information per many selectable criteria : by machine, by team or by time slots. It helps the managers to reply to their needs of control and reporting requirements through a solution presenting real-time assessments.

Our software is web-based solution containing all the available information accessible from wherever there is an internet connection from any PDA, Smartphone or terminal.

Controller for industrial dryer of food vegetables and fruits :



The Sirea's controllers deliver the best solution when it is necessary to associate several loops of regulation with boolean logic for control processes. In the food industry, most machines need precise temperature or pressure monitoring with sequential controls of many other devices as valves and electric motors.

In the case of industrial dryers, the controllers of Sirea brings a complete and global solution for the control of automations cycles and the control loops of temperature and rate of humidity in function of the nature of vegetables or fruits to dry.

Remote control for winding machine :



Sirea has designed a specific controller for the control and the regulation of a cable winding machine. The specificity of this machine resides in this innovative patented system of remote command through a radio terminal. By this remote control box, the operator can ensure the perfect control of machine in all safety. The telecommand is equipped with an emergency stop button allowing to stop immediately the machine. The algorithm of radio command is the only system on the market ensuring an immediate control and an absolute security between the command device and the control device of machine. This algorithm enables a permanent communication between the terminal and the controller. In case of loss of radio signal, the machine is immediately stopped in order to ensure the total protection of workers. This device can be deployed for all types of machines having need of fast remote controls coupled with a total security.

SMART CONTROL SYSTEMS FOR QUARRIES



Controller for automation in quarries :



Sirea has developed a complete and innovative automatic solution for the controls of processes in quarries. This solution includes several programmable logic controllers connected to a centralized management and information system. This solution delivers a truly integrated control system resulting in a significant increasing of production with, at the same time, decreasing significantly operating costs. The automation system controls all aspects of the crushing plant. The control of the crushing process is considerably more precise and much more information is sent readily to the management. It is a user-friendly system to be easily used by operators and it can be understood very quickly after a training session on digital simulators. The last asset of this system is its rapid installation and start-up. Through our digital simulators, it is very easy to test all the possible configurations before installation on site. The key benefits of our automation system are the following :



- production increase
- downtime after outage decrease
- best assistance to the operator
- best efficiency for the maintenance
- improved product quality due to a better loops control
- automated production reporting
- historical trending and data analysis
- data increase that helps improving decision making

Weight controller for belt conveyor :



A belt scale system consists of 3 elements: a frame of weighing equipped with a load sensor which measures instantaneous mass, a tachometer which measures belt speed and the weight controller which integrates these two inputs to determine flow rate and totalized weight. In most of the cases, it is necessary to integrate the information of the belt scale in the quarry automation system in order to know with precision the different quantities of production for the produced various granulometries. In the case of new installations, it's not usually very difficult to connect these equipments but in the case of existing installations or for installations not equipped with a numeric control, the exploitation of weight data is harder and it can be very expensive.



The solution of Sirea allows to resolve these problems. All the data measured are transmitted through radio signal to a central platform that collects them for a local exploitation and / or for a connection to system control.

Our software is web-based, what makes it is possible to access to all the information available from everywhere for a remote management.

Protection of workers in quarry or mining :



The noise and dusty environment in the quarries and mining areas constitute a danger for the workers moving around the mobile machines.

In most of the cases, the mobile machines are equipped with sound devices for alerting the pedestrian but, this protection is often not efficient enough. This is the reason why Sirea has developed a patented solution focused on the detection of pedestrians around mobile machines in quarries or mining areas.



The solution includes a receiver installed in the driving cabin which is powered as soon as the engine starts. Each pedestrian is equipped with a radiofrequency transmitter which sends a radio signal according to a programmable frequency. When a pedestrian walks into the detection area, an alarm is immediately triggered (the detection area is customizable). The system displays the number of badges present in the danger zone by emitting a sound and light signal for alerting the driver.

This solution can be used there where the protection of people working near the mobile machines is necessary.