



SOFTWARE PLATFORM FOR SUPERVISION AND HYPERVISION OF SYSTEMS

Water

WATER PRODUCTION & DISTRIBUTION
WASTEWATER TREATMENT

ARC Informatique has been developing and marketing industrial software for over **35 years**.

PcVue Solutions is a suite of software and hardware to visualize, control and analyze the information of your installations. Integrating the latest technologies, our solutions are innovative, sustainable and secure.

The PcVue software platform is particularly suitable for the supervision of any installation in the field of water.

PcVue interfaces with Sofrel, Perax, Wit, or other equipment via hundred plus native data acquisition standards enabling the deployment of flexible and scalable architectures.

Featured with the latest UX standards ergonomics, PcVue has an advanced management of alarms and events, to efficiently monitor and control installations.

The analysis of long-term data is made possible by archiving functions and associated tools (curves, reports, ...). Our advanced reporting solutions allows the design and the transmission of the necessary reports to authorized organizations.

A PcVue application will thus meet the requirements of regulatory qualities. To date, several thousand sites, distribution or water treatment are supervised by PcVue Solutions worldwide. PcVue is retained by the largest companies building and operating water treatment facilities.

Certified ISO 9001 and ISO 14001, ARC Informatique is present throughout the world and relies on a network of partners, distributors, OEMs, machine builders and system integrators for to offer its products and expertise. Both ISO 9001 and ISO 14001 certified, the company maintains an international presence through direct sales offices in the US, Europe, Asia and Latin America and relies on its partner network to guarantee exceptional service, domain expertise and product satisfaction.

PcVue Solutions, your independent global SCADA provider

A global player with a local approach

15 strategic bases

50+ VAR worldwide

200+ local SI partners



A customer-oriented approach

Listen to and answer our customers
Develop and adapt our solutions via R&D
Responsive technical support

Continuous quality improvement

ISO 9001 & ISO 14001 certified

Microsoft certified partner

OPC foundation member

Member of the BACnet™ Interest Group

LonMark® International member

LonMark® France member

IEC 61850 DNV-GL Certified

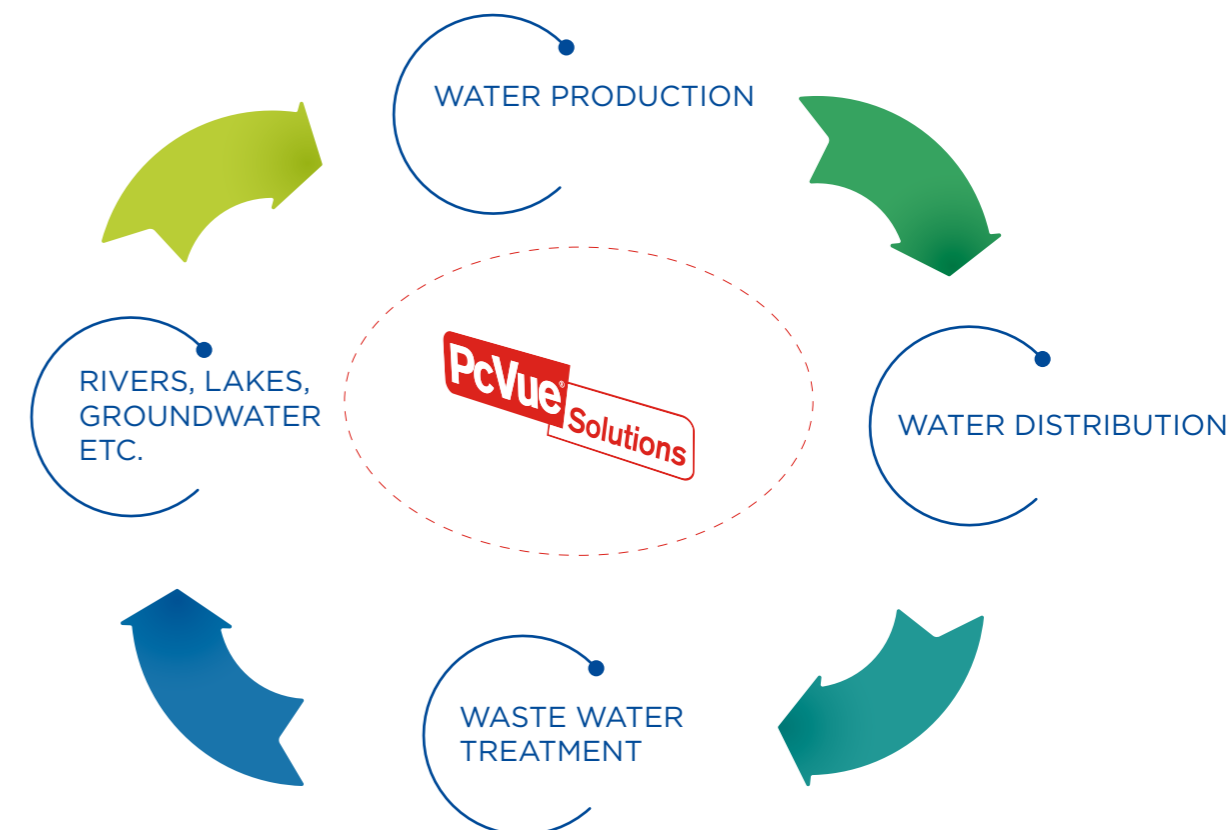
BACnet™ Advanced Workstation BTL Listed



“ An offer designed for all water systems needs that meets the operations and regulation requirements ”

BENEFITS

- ✓ Monitor and control all kind of water systems
- ✓ Enables return on investment by reducing engineering time maintenance and energy costs
- ✓ Improve operational effectiveness to increase both productivity and quality of service
- ✓ Help to meet the requirements for compliance and regulatory reporting



“ A platform that allows monitoring and controlling efficiently your water system, while making the design and the deployment easy, scalable and secure. ”

FEATURES

- ✓ Platform adapted to all kind of water systems
- ✓ Dedicated object libraries for Water
- ✓ Events and alarms treatment
- ✓ Powerful trends capabilities
- ✓ On-call and mobiles solutions
- ✓ Data processing and reporting tools
- ✓ High availability architectures
- ✓ Telemetry solutions

Why choose PcVue Solutions ?

PcVue is a monitoring platform that provides the connectivity, functionality, and security required in water production, distribution, or treatment processes

Improve operational effectiveness to increase both productivity and quality of service

The quality of water production or treatment imposes reliable systems capable of reacting quickly to potential defects.

The PcVue platform ensures a high availability of the system with redundancy mechanisms and security features.

The ergonomics and processing tools of PcVue are designed to allow operators to easily access important information and make the right decision very quickly. PcVue also offers on-call features and innovative mobiles solutions for remote operators.

A single platform to monitor and control any kind of water processes

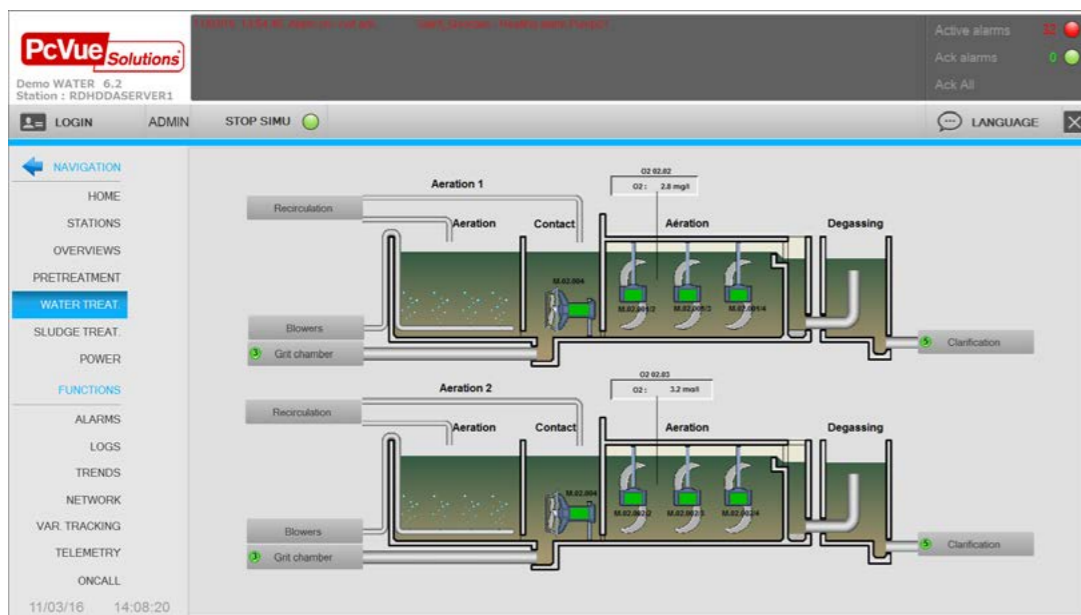
The PcVue platform makes it possible to connect to all the equipment and systems needed for the **production, distribution and treatment of water**, thus guaranteeing uniqueness of data and treatments.

Enables return on investment by reducing engineering and maintenance time

Based on an object-oriented approach, PcVue's configuration environment minimizes the risks of error, to reduce the development costs and to simplify the applicative maintenance.

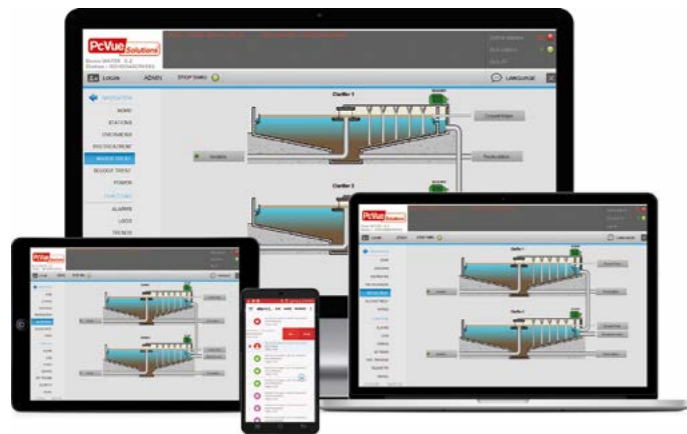
Help to meet the requirements for compliance and regulatory reporting

PcVue offers a set of solutions (archiving, processing, ...) to analyze data and provide regulator with reports of quality indicators.



A single platform to operate the water systems

Supervise your installations efficiently



VISUALIZATION AND COMMANDS

- ✓ Customizable, modern and intuitive graphical interface
- ✓ Objects libraries dedicated to Water
- ✓ Real-time visualization of the installation' status
- ✓ Sending commands to the devices

MOBILE SOLUTIONS

- ✓ Remote control on smartphone or tablet
- ✓ Mobile app for alarms & events notifications
- ✓ Mobile app for automatic display of geo-contextual info depending on the location and user role

Ensure the reliability and the availability of the system

ALARMS & EVENTS MANAGEMENT

- ✓ Data display by zone, equipment, use...
- ✓ Real time and historical data trends
- ✓ Comparative trends
- ✓ Threshold display
- ✓ Data trend export to Excel



MONITORING AND ANALYSIS OF ENERGY PERFORMANCE

- ✓ Customizable Dashboard
- ✓ KPI - Key Performance Indicators
- ✓ Consumption balance sheets by period
- ✓ Archiving data in a local database or in the cloud (Amazon, Microsoft Azure,...)

Optimize return on investment (ROI) while ensuring regulatory compliance

Control of performance, operating costs, and regulatory compliance

OPERATING DATA PROCESSING

- ✓ Built-in SQL recording system
- ✓ Editing of dynamic reports (consumption balance sheets, ...) from archived data
- ✓ Data statistics export to Excel
- ✓ Trends comparison
- ✓ Built-in Email & SMS features to broadcast message on demand from PcVue (ie triggered on alarm)
- ✓ Web Interface to generate and visualize reports on demand



Engineering & Integration

Create, maintain and update the project

Optimizing development costs with a platform, easy to implement and maintain

An object-oriented approach to minimize the risks of error, to reduce development costs and to simplify the applicative maintenance

Scalable deployment, from the local station to the multi-site architecture

Interoperability, from the production to the several information systems of the company

Smart Generators

Mass import configuration from third-part softwares or from external configuration platforms (PLC's platforms, CAD softwares, proprietary softwares, SCADA...)

Schneider Unity®
Siemens® TIA portal
FactoryLink
XML
...

Graphical interface

Intuitive
2D/3D object library
+60 predefined animations
Multi-lingual HMI Platform



Advanced event and alarm management

Configurable event/alarm windows
Sorting filter by status, priority and/or attribute - modifiable online
Contextual alarm management
Alarm counter

Supporting the 21cfr11 standard

Trends

Simultaneous display of real-time and archived trends
Customizable interface
Trend export towards Excel

Extended drivers range

SOFREL

S50, S500, Sofbus-PC, Sofbus-PL, Lacbus-RTU, SMS for S500,LS,Box,S50

PERAX

P200, P400, P16, Perax time stamped

WIT

TRS II

Modbus IP

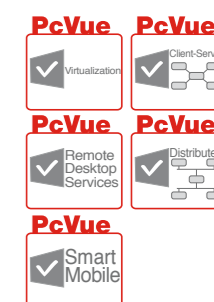
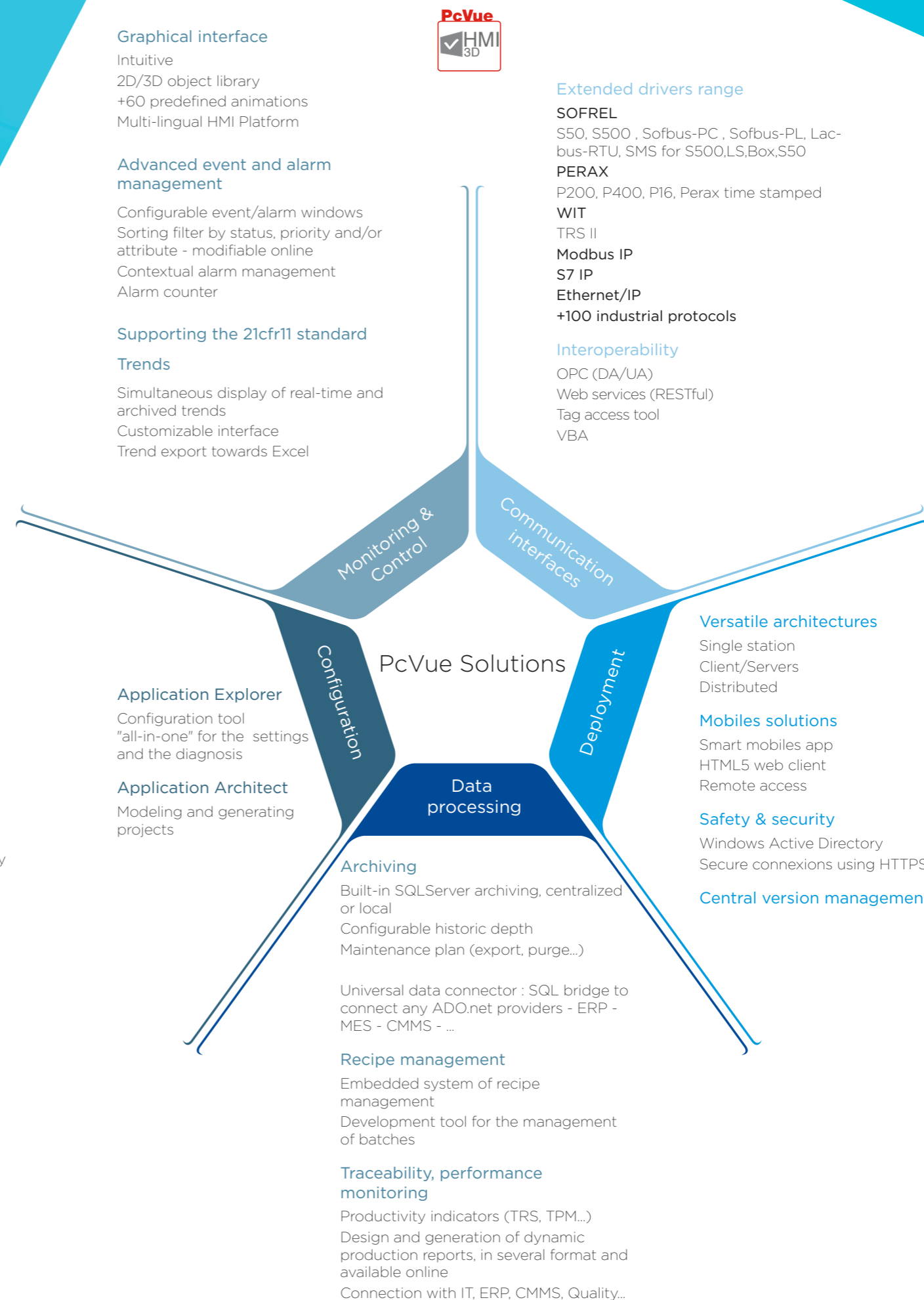
S7 IP

Ethernet/IP

+100 industrial protocols

Interoperability

OPC (DA/UA)
Web services (RESTful)
Tag access tool
VBA



Success Story

Northern Rockies Regional Municipality Water and Wastewater Treatment

PcVue enables operations team to improve their productivity

The Northern Rockies Region of northeastern British Columbia is blessed with a significant wealth and diversity of natural resources, heritage and cultural attributes. Over the last four decades, the region has experienced up and down cycles due to the growth and decline of numerous resources and development activities. There have been interesting development proposals such as the Horn River Shale Gas Development, a working partnership that would link the Northern Rockies Regional Municipality, Fort Nelson, and First Nation communities with the oil and gas industry and provincial government agencies.

Configuration of the water treatment system

The Northern Rockies Regional Municipality water and wastewater treatment facilities - comprising

of a network of pump houses and other facilities - produces the treated water needed to run operations for the oil & gas patch and forest & mining activities, in addition to serving its population of about 5,000 residents. They have a bulk water station that furnishes water for those who are not on municipal water and to the trucks that transport water to operations in the oil/gas patch, such as for fracking.

"Fort Nelson has a fully automated bulk water station, which delivers an average of 400 m³ (14,000 ft³) of treated water for residential and industrial usage daily. This station is fully integrated into the municipalities' SCADA system, which facilitates monitoring of flow totalization, alarming of heat trace and boiler systems, as well as trending chlorine residual levels in the water

BUSINESS CHALLENGES

- ✓ Automate and reduce repetitive tasks and improve staff productivity

SUCCESS KEYS

- ✓ Tight integration between the Remote Terminal Units and the SCADA host for quick resolution of issues

being dispensed, etc.," said Michael Ferguson, Electrical and Automation Specialist for the Northern Rockies Regional Municipality.

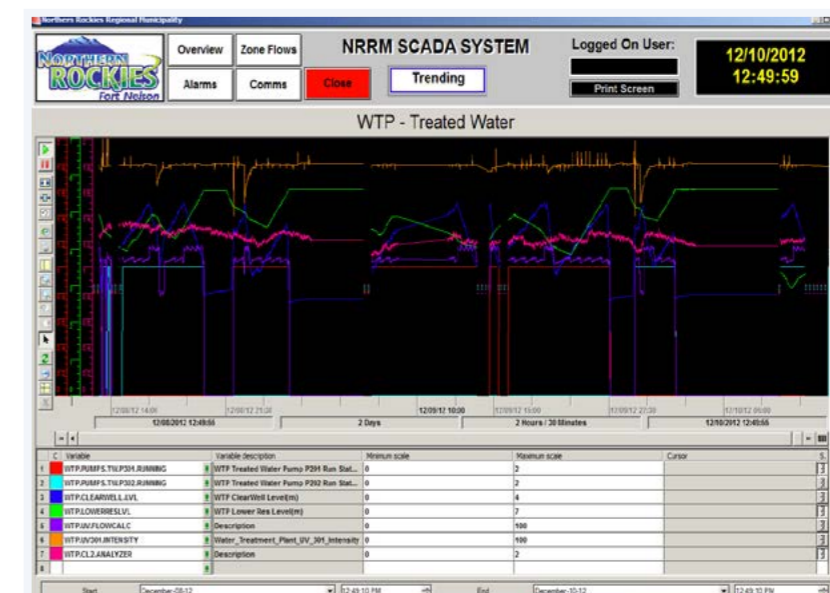
According to Ferguson, the municipality recently moved from FactoryLink, to PcVue for use with their SCADA system. Fort Nelson's SCADA system includes 22 Motorola ACE RTUs at various pump and lift stations, which communicate over a 900 MHz IP Radio network.

"We have two Motorola IP Gateways (of the ACE3600 platform), which are primary and redundantly configured. The IP Gateways are the interposing link between the network of field RTUs and the managing Servers (also redundantly configured). Our servers are located at the Municipalities Water Treatment Plant."

Through the help of their value-added reseller (VAR), CTH Systems, they chose the hardware independent PcVue SCADA Solution that integrates seamlessly with CTH Systems'

IM-SCADA™, an advanced multiprotocol measurement and communication software. *"CTH Systems provided the key component (the IM-SCADA™ Driver Software) that allowed for a quick transition to PcVue," said Ferguson.*

CTH Systems used PcVue's SCADA application builder tool, called Smart Generator, to port Northern Rockies applications to a more secure and robust SCADA architecture. PcVue and CTH's IM-SCADA™ software sit on these servers as well as the historical databases.





First and only resource municipality

The Fort Nelson facility also happens to be British Columbia's first and only "Resource Municipality" to service the industry, local residents, and businesses. It covers more than 10% of the Province and includes the majority of the vast Horn River Shale Gas Development. Ferguson manages the electrical systems, process control, automation and communication component of the municipalities' water and wastewater infrastructure.

Currently Fort Nelson's SCADA system manages about 8,000 tags. With ongoing capital projects such as a new UV disinfection station to treat wastewater effluent, the system is poised for growth.

Fort Nelson's water treatment process begins by drawing raw water from the Muskwa River, downstream of the Alaska Highway bridge crossing. There are several critical processes involved in filling the municipalities' raw water reservoirs. The initial pumping of the raw water from the Muskwa River requires multi-stage pumping with PID control to overcome tremendous head pressure and control the variable flow rates.

"The process of treating water is not a static process for us. Process variables such as turbidity, color, and organics are influenced from things such as weather events. For instance, we once experienced a mudslide where the river we pump raw water from was impacted," said Ferguson.

Report and trend generation for preventative maintenance

CTH has provided engineering support to



allow the municipality to export data in the form of text files (CSV format) to a report and trend generation service called 'FlowWorks.' FlowWorks conditions incoming data with various algorithms such as time-weighted averaging, allowing for the municipalities' non-operations personnel to view trends and generate reports. Additionally CTH has provided real-time and historical trending as an inherent feature of the IM-SCADA™ driver. This feature presents the data needed to make decisions on how to best optimize operations.

As Ferguson further works to develop the potential of Fort Nelson's water and wastewater SCADA system, he plans to integrate PcVue with other management applications such as their work order system.

RESULTS

- ✓ Solution with PcVue allows operations to be more efficient in their work

"The goal of our responsible management and preventative maintenance philosophy is to 'bundle' systems like SCADA, PDAs, and work order application software together. To responsibly operate and maintain a productive multi-million dollar infrastructure such as ours, it requires that we combine the use of technologies, the efforts of personnel, and a forward thinking approach," says Ferguson.

Currently Ferguson is working to have automatically generated work orders based on pump run-times and pressure changes that indicate wearing seals, etc. In addition, he would like to have the ability to view system data such as alarms, pressure, and levels from a mobile device such as an iPhone, which is now possible with the use of the latest version of the IM-SCADA™ driver.

"Having the freedom to access real-time system data from a mobile phone is a welcomed feature, which will get a lot of use from operators at NRRM," adds Ferguson.

PcVue is configured to have one mimic per site along with configured pop-up windows so that if additional details are needed on a pump house or certain critical values, an operator can just simply click on the icon to open a pop up

window to give the information needed. *"We have multiple mimics built in PcVue that facilitate the various exchanges between the operator and host. Graphically the mimics are the same as what would have been in FactoryLink,"* continued Ferguson.

PcVue contributes to Fort Nelson's effort to reduce reactionary repairs, and unexpected equipment replacement. This is achievable by tailoring alarm and reporting functionality to expose issues at their incipient stage. The use of a fully automated SCADA system is essential in downtime prevention in water and wastewater services provided by this growing municipality.

CUSTOMER

Northern Rockies

CANADA

SYSTEM INTEGRATOR

CTH Systems

References

Some of our references

Publiacqua drinking water plant / Anconella - Florence, Italy

Monitor and control of the Anconella drinking water plant

DESCRIPTION

- Managing the purification processes (240,000m³ per day) and electricity consumption.
- Historical data are transferred via ODBC to a central archive for access on the company's intranet.

TECHNICAL ENVIRONMENT

- A central, redundant PcVue server.
- 9 PcVue client stations.
- Remote access using WebVue web client via WiFi
- Communication network using Applicom Profibus and Ethernet
- Siemens S5 and S7 PLCs.

Super Rimiez waterworks / Nice - France

Central control of the station's water treatment and telecontrol for the upstream and downstream network

DESCRIPTION

- One of the most modern drinking water production plant in Europe, with an output of 150,000m³ per day.
- The supervisory system controls the station's processes (sifting, coagulation, flocculation, decantation, filtration and ozonization)
- Remote monitoring of the upstream canal & alarm stations
- Downstream monitoring of distribution network for the city of Nice, with extensions as far as Italy and occasionally to Monaco.

TECHNICAL ENVIRONMENT

- 14 PcVue supervisory stations.
- 80 Schneider PLCs on an Ethernet network.
- Teleprocessing devices (30 Perax and 42 Sofrel).
- About 15,000 variables.

Grenoble Water Company / Grenoble - France

Monitor and control of water distribution for Grenoble

DESCRIPTION

- 220 km of pipes
- 16 million m³ of water distributed annually
- 163,000 residents supplied

TECHNICAL ENVIRONMENT

- 2 redundant twin-display servers, 2 clients
- Schneider Electric, WIT and Perax PLCs
- Traceability & reporting on SQL Server
- Meter readings on PSION terminals
- TCP/IP and STN network



Taipei city rain water pumping stations / Taipei - Taiwan

Monitor and control the rain-water pumping station

DESCRIPTION

The rain-water pumping station is one of the most important part of the city flooding preventing system.

This system is split in 4 Operational Areas and one Central Management Area

TECHNICAL ENVIRONMENT

- 9 pump stations in area 2,
- 7 pump stations in area Qin Li,
- 11 pump stations in Area 3.
- Between 500 and 3 000 I/O variables per pump.
- Area 1 is supervised by a different system
- About 5000 OPC variables are collected from the Central Control Room
- The Central Control Room aggregates all the data from the different Areas
- Today estimated between 30 000 and 50 000 variables

Collection and transport of water SIAAP (Syndicat Interdépartemental de agglomération Parisienne) / Paris - France

SCORE (System for Control, Organization and Regulation of Emission) for Paris and suburbs

DESCRIPTION

SIAAP manages a network of 440 km of collectors and outfalls to transport all sewage collected in the sewers.

To ensure the safety of the transport of wastewater and the one of urban equipment, the SIAAP must regularly inspect, maintain and clean the network.

- Covering 440 km of pipelines
- 160 data acquisition and routing sites managed by PLCs.
- 30,000 data points for telemetry and remote control.

TECHNICAL ENVIRONMENT

- 160 Schneider Electric TSX 37 & 57 PLCs.
- TCP/IP, Unitelway and Unitelway/IP networks.
- Two PcVue application servers.
- WebVue light client stations.
- Long-term data archiving on an SQL Server.

Your Independent Global SCADA Provider



ARC Informatique

Headquarters and Paris office
2 avenue de la Cristallerie
92310 Sèvres - France

tel + 33 1 41 14 36 00
fax + 33 1 46 23 86 02
hotline +33 1 41 14 36 25

arcnews@arcinfo.com
www.pcvuesolutions.com

