

Vaasan Vesi, City of Vaasa, Finland

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“The advantages of the new system include reliability, functionality and clear control and reporting. The decentralized network structure and the capability to store large amounts of information allow high system availability and room for future expansion.”

*Per-Eric Lindh,
Instrument Technician,
Vaasan Vesi*

City of Vaasa Gets Quick Upgrade to Higher Reliability and Functionality with Wonderware Solution

Goals

- Upgrade to new automation and control software with capabilities to meet the needs of a growing, environmentally conscious city
- Create a new system that would be easy to maintain, provide excellent reliability and offer high availability of data

Challenges

- It was necessary to plan the upgrade carefully to ensure that there would be no shutdowns during the changeover
- Once upgraded, the new system also needed to anticipate problems and avoid future interruptions in operation

Solutions and Products

- Wonderware® InTouch® HMI
- Wonderware System Platform
- Wonderware Historian
- Wonderware Historian Client

Results

- The City of Vaasa and its citizens are benefitting from a sustainable water and wastewater treatment solution
- The project was completed ahead of schedule with no shutdowns or customer complaints during the upgrade
- Management finds the Wonderware solution to be highly reliable and functional, easy to configure, change and expand
- The Wonderware solution architecture accommodates flexible remote connections to workstations throughout the city
- Back up and security levels for data have been achieved; clear controls and reporting are meeting management requirements



Vaasa, Finland – Vaasan Vesi, a company of 60 employees, is responsible for water acquisition, cleaning and distribution plus sewage and wastewater treatment for the City of Vaasa's 65,000 residents. This municipality on the western coast of Finland has a strong focus on sustainability – it is part of the Kvarken archipelago, which is a UNESCO World Natural Heritage Site. So Vaasan Vesi's business principles are complementary: to provide uninterrupted water and wastewater management, to be customer oriented, and to undertake all development projects with consideration for the people and the environment.

When it came time to modernize the automation system for the city's waterworks and wastewater facilities, Vaasan Vesi chose Wonderware system integrator Avecon Oy to carry out the exploratory study.

Plumbing the Possibilities, Charting the Challenges

Avecon Oy evaluated the existing system, then defined current objectives and future requirements. Based on this review, they recommended an automation solution with PC-based software, Ethernet and fiber optic

networking, and PLC control devices. Such a system would offer flexible connectivity and enable future expansion, even onto additional platforms and environments.

City officials also shared parameters that would meet the needs of the residents. The chief requirement was that the citizens would not experience any stoppage of water service during the deployment of the new system. Moreover, they wanted the new solution to be easy to maintain and have monitoring capabilities that would ensure ongoing uptime and consistent operation.

After comparing a number of competitors, Avecon Oy submitted Wonderware as the solution that could meet all of these criteria. Vaasan Vesi and the City of Vaasa agreed, and the project to upgrade the automation and reporting system was approved.

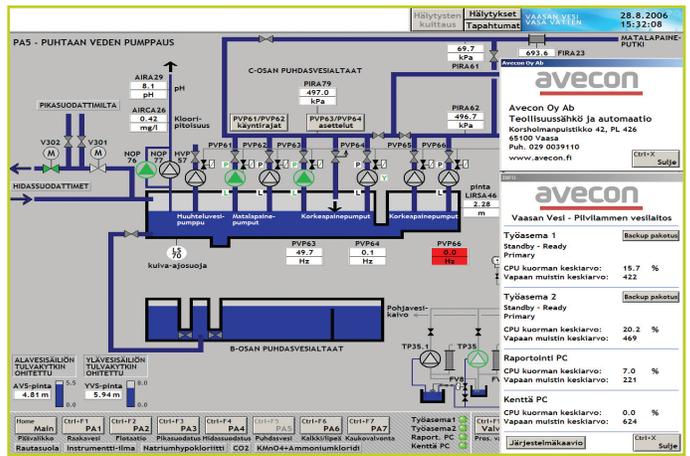
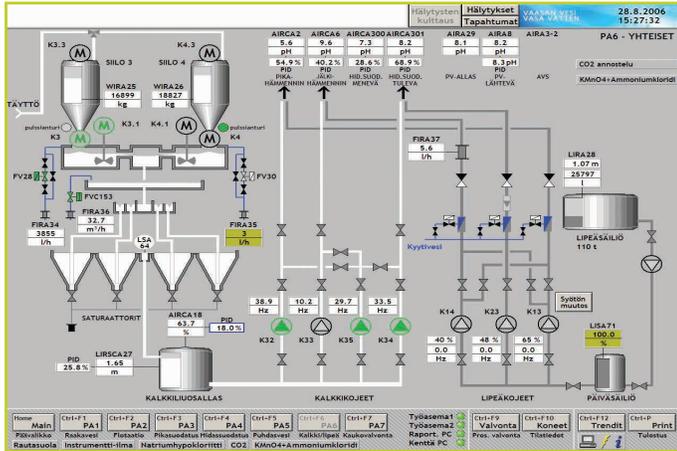
Reliable Communications and Transfer of Data

The system is built upon seven PLC controller process stations, connected by Ethernet to eight substations throughout the city, each with their own separate PLC controller. Optical fiber runs



between the process stations and the substations for maximum reliability. The reliability is further supported by industrial-grade Ethernet switches equipped with optical fiber ports, rather than using separate fiber converters.

This secure network became the foundation that allowed the Wonderware software solution to add important capabilities for the city.



Client software adds advanced capabilities for reporting. And Avecon Oy has developed proprietary reports to support specific Vaasan Vesi requirements.

A critical asset of this architecture is its versatility. Adjustments to the system can be made from any of the processing locations or the substations, and from any management, reporting or development workstation. And since the workstations are connected via broadband, all personnel and points in the system can communicate online, wirelessly.

Solution Strengths

The Wonderware solution provides a number of distinct advantages to the City of Vaasa:

Open, flexible platform – The Wonderware System Platform is ideal for this decentralized system, enabling remote connections, the integration of existing and new software, plus special application modules (see sidebar below).

Monitoring and Reporting, Onsite and Off

Wonderware software is uniquely supportive of Vaasa’s process station and substation architecture. The Wonderware Application Server’s decentralized application database provides monitoring and reporting while the Wonderware InTouch HMI offers easy-to-learn and simple-to-use visualization of the system on any monitor throughout the system.

Two redundant main monitors handle the majority of the supervision and control of the processes. Here operators can see the physical layout of all plant components and monitor the waterworks in real time.

Outside of the process stations, the Wonderware software is loaded onto mobile workstations, so engineers in the field can work efficiently from wherever they are, saving time and travel costs.

A separate workstation runs the Wonderware Historian database. Reports and measurements are easily accessible and offer actionable, real time data to operators. Plus the database provides information to managers for planning and compliance. The Wonderware Historian

SMS Integration

The Wonderware System Platform and InTouch HMI software in the system are integrated with SMS gateway software on the City of Vaasa’s GSM/GPRS network. Wireless internet connections between PCs enable operators to receive alarms and messages instantly from the automation, control and reporting applications.

Efficient design and system management –

The Wonderware software platform’s library of templates and object-oriented graphics saved development time and increased accuracy and standardization as the solution was deployed.

Easy to configure and test – After the initial setup, adjustments to the configuration were performed in test mode and then transferred onto the existing operations.

Control benchmarks – The city’s targets for backup and information security have been reached.

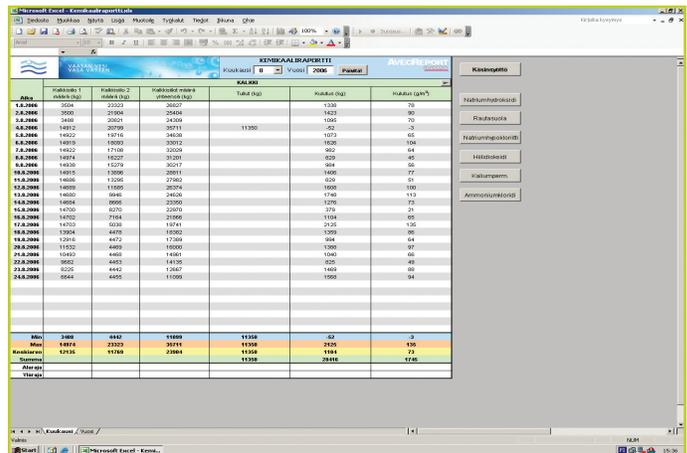


Resounding Success

The project team members, including City of Vaasa officials, Vaasan Vesi, Wonderware system integrator Avecon Oy and Wonderware Finland, report a positive outcome for the new system.

But most importantly, the solution is delivering for the residents. The new software integration was completed quickly and without disrupting their water and related services. As a matter of fact, the new system was introduced just eight months after project approval, which was ahead of schedule. And during the first month and a half, when the system was monitored by on-duty personnel around the clock, no customer complaints were recorded.

“We are satisfied with planning as well as realization of the project. It has been a great success,” said Ruben Herrgård, Operations Manager, Vaasan Vesi.



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