



"InTouch provides our staff with 'Hypervisory' capabilities by animating the large blocks of diagrams from the HMI, and projects them onto our innovative operator management video wall. The displayed information provides details to effectively manage the city's extensive water system."

Frank Montiel,
Head of the Regulation - CTM
project in the Information Systems
Department, Eau de Paris

InTouch Enhances Video Monitoring Applications to Ensure Efficient Water Distribution in Paris

Goals

- Improve visualization for operators to manage system processes
- Streamline process for viewing and supervising multiple water distribution facilities

Challenges

- Integrate a detailed AutoCAD map of the water distribution network with existing Wonderware InTouch HMI
- Automatically add video recordings of areas under surveillance monitoring to record any unauthorized intruders

Solutions and Products

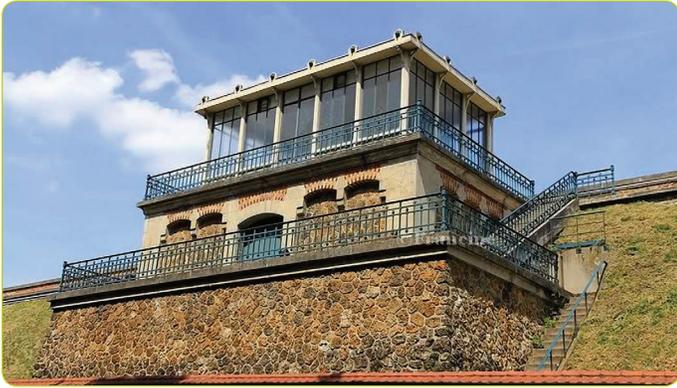
- Wonderware® InTouch® HMI

Results

- The system successfully processes more than 20,000 variables of information
- Effective management of 120 facilities which process water from 102 collection points
- Operators can view activities both on the video wall or from their traditional workstations showing relevant views, back-to-back in relation to the large animated block diagram
- The user-friendly application equals less stress for operators



Paris, France – For more than two millennia, Paris has been one of foremost cities in the Western world. Today, Paris is home to over 10 million people spanning almost 1,000 square miles. To provide its citizens with clean water and an efficient wastewater system, the city's water system comprises 1,491 miles of underground passageways dedicated to its water and wastewater operations.



The city's Eau de Paris is the municipal authority in charge of the production and distribution of water in Paris and has been successful in managing its unique network of water pipelines and aqueduct structures. With the agency's team of engineers and use of advanced software systems, Eau de Paris provides one of the best drinking water networks in France.

In 1995, Eau de Paris installed Wonderware InTouch to provide advanced visualization and monitoring of its vast network of water distribution pipelines. The agency recently decided to take advantage of the latest Wonderware InTouch upgrade and the changes included advanced video capabilities.

Helping to Supply Safe, Clean Drinking Water to the "City of Light"

The water processed by Eau de Paris comes from 102 collection points situated to the west and south of Paris, with the furthest being more than 90 miles away, as well as from the Seine and Marne rivers. The ground water is treated in four plants, with two plants processing water from the rivers. The Eau de Paris central supervision station processes 20,000 variables of information from 120 local technical stations all over the city as well as from the Paris environs.

Not surprisingly, these facilities relay a large quantity of information remotely which includes water flow measurements, pressure measurements, water quality measurements, lift pump readings, and regulation valve controls.

The agency's central control room has evolved over the past 40 years to adapt to changes in technology, and meet new requirements. In the early 1990s, the integration of new water treatment and distribution facilities quadrupled the quantity of information to process. The Distributed Control System (DCS) in place at the time was unable to keep up with the growing requirements of Eau de Paris. Because the existing DCS was proprietary technology from the previous integrator, the agency was unable to easily and cost-effectively make changes to keep up with the advancing water management requirements. The management team had to make a strategic decision – develop the HMI internally.



"Wonderware InTouch HMI was the obvious choice. Even back then, we were convinced that the future belonged to PC solutions based on the Windows® platform and we were confident in Microsoft® technologies," said Frank Montiel, head of the Regulation-CTM project for the Information Systems Department of Eau de Paris. "Wonderware has a solid global installed base and works closely with Microsoft, which fulfilled our requirements. As for the Wonderware InTouch HMI software package, it was already used on our sites and we had received much success and positive feedback from our team."

In only six months, the three technicians assigned to the project were able to develop the entire HMI, demonstrating the clarity and quality of Wonderware InTouch technical documentation.

InTouch HMI, Best Total Cost of Ownership

In the mid-90s when the decision was made to install Wonderware InTouch HMI software, Eau de Paris was able to develop an events database, consumption calculations with reports, auto dialing of telephone numbers in the event of a faulty communication line, all based on Microsoft to easily connect with the HMI application. Wonderware InTouch offers unequalled device integration and connectivity to virtually every device and system used by Eau de Paris.

With Wonderware InTouch, Eau de Paris is able to easily and quickly create standardized, reusable visualization applications and deploy them across its entire enterprise. With unequalled device integration and connectivity to virtually every device and system within the city's water system network, operators, administrators and management can more effectively assess data and increase productivity.

"Even the allocation of the tag names required specific development. To create names for our



tags, the operator selected items in the menus and successive sub-menus. The name was then built gradually based on name of site, type of water treated, function carried out, equipment, type of measure, etc. using strict and explicit semantics," Montiel said. "Simply by reading a tag, the technician can immediately understand what needs to be done."

With resolution independent graphics and intelligent symbols, Wonderware InTouch HMI visually brings Eau de Paris facilities to life right on operators' computer screens. Featuring sophisticated scripting, Wonderware InTouch enables staff to extend and customize applications for their specific supervisory needs.



InTouch HMI Provides Innovative “Hypervisory Solution”

Recently a request was made to minimize the potential risks of malicious or even terrorist acts that may target the city of Paris water system. To address these potential threats, access controls using cards, intruder detectors and video surveillance cameras have been installed at vulnerable sites, with all information escalated to the supervision and surveillance central division.

“These new applications have been installed on separate PCs that are independent from those in charge of controlling the water and wastewater operations. As a result, facility operators had several screens to manage at one time. To solve this problem, we decided to set up a video wall where large diagrams from operator screens could be displayed, showing our installations and presenting different information, such as, the values of important control parameters and video images showing any intrusion attempts,” Montiel said.

From the start, the idea was to use the detailed (and large-dimension) block diagrams of the installations, which were created with AutoCAD and already in use by Eau de Paris. To turn this block diagram developed in AutoCAD into a supervisory tool, it had to easily integrate with the Wonderware InTouch HMI. The information to be displayed from InTouch included the values of useful parameters for the control functionality, as well as other sources such as surveillance videos.

Furthermore this animated block diagram then had to be displayed clearly on a video wall. To ensure the success of the project, Eau de Paris worked with Basis, a systems integrator specializing in industrial IT and Wonderware applications.

The actual installation took less than a month, including the on-site commissioning period,” said Philippe Sirgue, business manager at Basis. “It was very simple to import the AutoCAD file into InTouch using a dedicated utility proposed by Wonderware.

The exchanges between the InTouch application and the video controller wall take place via API programming of the HMI interfaces.”

The large animated block diagram and the video projections take up around half of the area of the video wall, which measures about 16 feet wide and five feet high. The free zone is used to display 10 classical InTouch HMI windows and images (in mosaic form) supplied by the many surveillance cameras on the video wall.

This application is a real success, with exemplary cooperation between Wonderware, Basis and Eyevis, the supplier of the video wall.

“These are not classical supervisory diagrams; we refer to them as ‘Hypervisory,’” Montiel said. “InTouch is responsible for animating the large block diagram on the video wall, where values related to control are shown, along with video images. These video images are not processed by the control system, but by InTouch. For example, if an intrusion detector (which is connected to the control system) is triggered on a technical site, it is immediately relayed to the operators via the video monitor wall. This is how we define ‘Hypervisory’ capabilities.”

Residents and visitors alike can be assured that Wonderware InTouch is not only helping to deliver a quality water supply to Paris, but is also a key component in protecting against malicious acts intended to contaminate or disrupt the precious water supply of the City of Light.



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