

## UCS - Urban Community of Strasbourg, France

### ControlMaestro serving Water Zoning



The water service UCS' mission is to produce and distribute drinking water for 12 of the 28 communes of the Urban Community of Strasbourg (Bischheim, Eckbolsheim, Hoenheim, Ostwald, Lingfield, Oberhausbergen, Ostwald, Reichstett, Schiltigheim, Souffelweyersheim, and Wolfisheim Strasbourg), that is to say 90% of the UCS' population.

The water service is a public service with industrial and commercial view working 7 d/7 and 24 h/24, 365 days a year. Through 1100 kms of pipes, they are 120 000 m<sup>3</sup> of drinking water that are distributed daily to 400 000 users.

“ Our new ControlMaestro SCADA application dedicated to sectorization developed less than a year ago offers us a complete satisfaction to the extent that we are now able to make a detailed analysis of our network's behavior and optimize it. ”

Claude Steinmetz  
Technical Control engineer for the development and parameterization of the supervision system, Urban Community of Strasbourg (UCS)



Polygone production plant of Strasbourg, France

The primary objective of the UCS is to identify these leaks and losses while sectoring its network into several meshes to identify problem areas and analyse malfunctions.

It's by analysing the inflows and outflows of a sector that the current consumption of a mesh is obtained. Then it can be compared to the sales in that sector to calculate the difference and thereby estimate the percentage of leakage or other losses, related to the pipe joints, cracks, theft of water (sites connected to the fire main, etc...) and various municipal uses (street washing, watering of parks, fire, etc...).

## The Presentation

### Rough water in the valves

The water supplied by the UCS is drawn from the Rhin's ground water from four major pumping stations spread all over the UCS's territory. This raw water requires no treatment, just a slight chlorination to maintain its quality during its path through the water network.

The drinking water's distribution provided by discharge directly into the network is connected via a 30,000m<sup>3</sup> surge tank. This reservoir built in 1985, serves to buffer fluctuations in demand throughout the day. It fills during the night, and gradually empties through the day to feed the network.

## The Situation

### A better indentation for a detailed analysis

One of the UCS's problems is the performance improvement of its water network (now around 75%) through the detection and measurement of losses in order to be able to directly act on these. The best yields in urban areas ranging from 85%, some increase is referred to ensure that water is sold in bulk and that subscribers can, through this, enjoy an optimized production cost.

## The Solution

### An effective answer, over the water

ControlMaestro is able to respond effectively to this water Network zoning application by the collection and centralization of production and consumption data, to see exactly what happens in the pipes, in real time.

All data of communication devices and network measurement (pressure sensors, flow, measures of quality: temperature, chlorine levels, PH ...) are reported to determine the flow direction, flow rates, as well as an indication of the water quality and the disinfection's effectiveness in the various sectors.

These parameters and information are automatically relayed every 3 minutes, either by permanent ADSL connections (real time) or by 3G queries.



Screen shot of the ControlMaestro application

## The results and the specific aspects

### A system that is part of the length

The UCS now has a clear indication of some sector's performance already equipped and can refine his work quickly and efficiently through optimization supervision system that synthesizes, historizes and manages, for each cutting and globally, the various data . Moreover, smaller are these meshes, more efficient is the system and the losses localized.



Sectorization/Zoning : West / East cutting of the network of Strasbourg City

An initial cutting of the UCS's network in two major areas has allowed identifying the eastern as the area which has the greatest loss of water.

UCS continues to implement measurement stations in re-dividing each cell by two. The division of the eastern sector identified more leakage, this knowledge will allow data analysis to accurately prove system performance.

### Advantages:

#### Avantages de la solution

- Production control and data management
- High modularity, scalability

#### ControlMaestro Advantages

- Ease of deployment
- Safety: Dual redundant network and hardware
- Rapid response to specific needs

#### Return on investment

- Time saving: rapid integration
- Efficiencies: optimized communication of key data
- Maintenance costs reduction

### Tecnicl Specifications:

#### Package

- **ControlMaestro**, the new SCADA generation

#### Architecture

- 2 data acquisition ControlMaestro stations
- 2 ControlMaestro remote stations clients
- Redundant Kepware OPC Server + Sofrel OPC Server

#### Equipment

- 4 networked Windows PC
- 17 Sofrels S550 Networked ADSL / 3G

The results produced by these new divisions will help guide the selection of future meshes and research for field leakage.

With **ControlMaestro** the Quality of Water Service's Department who is in charge of managing this system can see what is happening on different portions of real-time and access to field data for analysing and triggering the necessary actions that will increase yields.

These mesh divisions also involve costs, because you have to install new sensors on the pipes and flow meters.

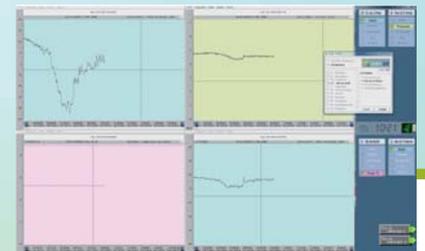
The UCS has opted for a slightly more expensive solution, which differs from conventional zoning on the one hand by the real time processing data and the other by the addition of monitoring quality parameters that already provide interesting and important status of the network, which will fully justify the investment with a fast ROI.

Indeed, concrete chambers with pressure sensors on valves and pipes are routinely installed in order to measure quality.

For this purpose, a cabinet, permanently accessible, is installed with communication and measurement devices.

The UCS anticipates on future sensors' developments, organic films that they could very easily integrate in time and relies on open platform field connectivity (hardware and controllers) from ControlMaestro to do so.

In addition to the detection and the faster treatment of the leaks, the CUS has now the visibility it needs to manage its priorities based on real data and calibrate the expenses related to the work and deployment of equipment into new sectors.



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