

Cloud Based SCADA for Small Water Districts

Efficiency improvements with a new control architecture

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FORMAT

30 minute presentation

KEYWORDS

SCADA, Plant Upgrade, Alarms, Energy Savings, Affordable Automation

ABSTRACT

The basic architecture of PLC-based control systems with PC based SCADA software has changed very little in decades. This presentation describes a new system architecture that reduces capital cost, deployment cost and running cost and can be deployed cost effectively for the automation of a small water district.

A case details the retrofit at a small water district in Geyserville, California, serving 86 homes. The district has two wells with a surge tank about a mile away. Sodium hypochlorite is used for disinfection and the injection is paced based on the flow from the wells. Two booster pumps move the water to a main tank up a hill more than a mile away. Pump scheduling is controlled to reduce cost by taking advantage of the local utility's time of use tariff structures. The cloud based SCADA is used to display both real time and historical trending and alarms without the need for a dedicated PC or custom software. The project was implemented as part of an upgrade for the utility.

ABOUT THE AUTHOR

Mauritz Botha was the co-founder and CTO of a number of companies specializing in environmental monitoring and control in South Africa. Mauritz worked as a product manager for Coactive Networks where he was part of the team that oversaw the move to large scale production of home gateway systems for a large Swedish utility. He was the co-founder and CTO of IMSI-Design where he was responsible for the TurboCAD range of products. He is Chairman of the Board of the Open Design Alliance, an entity providing libraries for open exchange of geometry between various popular CAD platforms. Currently he is the VP of Engineering at XiO, a company specializing in real time control systems and Cloud Based SCADA and has 29 years of experience. He holds a Bachelor in Electronic Engineering from the University of Stellenbosch, an Hons. Bachelor of Computer Engineering from the University of Pretoria and a Masters of Electrical Engineering (cum laude) from the University of Potchefstroom. He also holds a patent on a machine vision system for industrial control and a number of patents pending associated with his work at XiO.