

Application Note

Private Radio Network Results in Savings for Water District

Using leased lines for SCADA networks was a common practice by water and wastewater districts, though today many are seeking to replace them with private radio solutions. This change is due to the fact that leased lines come with high recurring costs and are comparatively unreliable. Troubleshooting is also difficult when issues occur and finding a telecom technician that knows how to repair the issue in a timely manner is becoming more and more difficult as this technology phases out.



Calcon Systems of San Ramon, California, presented us with an opportunity to replace a communications network originally set up on leased lines, when working with a water district located in coastal Northern California. The water district desired a private radio network that they would have complete control of, eliminating the cost and inconvenience of their unreliable leased lines.



Requests & Challenges

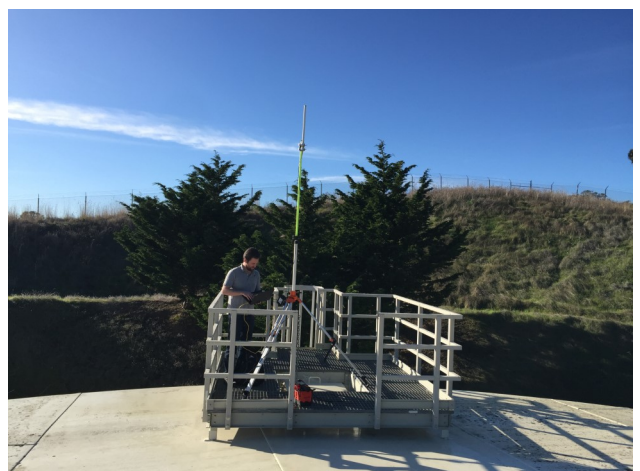
Not only was cost-savings a driving motivator for the change, but also service and support. The water district preferred to work with a local, full-service distributor that could provide on-site analysis of their system. The fact that Elevate Wireless offers consulting and on-site radio services alleviated the inherent risk and apprehension of making changes to an integral system. Because we had an established relationship with their systems integrator, Calcon Systems, and came with their recommendation, the decision was even easier for the district.

When initially evaluating the sites, the biggest technical obstacle was the lack of complete radio path data. A previous survey had been conducted by a different organization, but excluded the most difficult links. Because of this lack of data, it was unclear how an unlicensed 900 MHz solution would perform. Once this challenge was presented, our technicians proceeded to review the feasibility of radio communication using software simulations.

Services Provided

Our team at Elevate Wireless strives to provide thorough information to our customers, in order to allow them to make the most informed decision and remove any potential risk prior to purchase. We understand the importance of a reliable network and recognize that thorough review prior to installation leads to a much faster up time and better results over the lifetime of the network.

With favorable conditions in the software study, Elevate Wireless conducted a radio path survey using the proposed Xeta9-EL software defined radio on the most difficult radio links. This license-free, 902-928 MHz unit allows for industry-leading data rates and a wide variety



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of radio parameter tuning, in order to accommodate various link conditions, such as noise and environmental factors. The survey confirmed very low noise levels and excellent link quality on the 900 MHz ISM band. A full report was provided to Calcon Systems with recommendations and proposed equipment, including radio hardware, antennas and RF cables.

Results

Because of the thorough work provided by Elevate Wireless prior to installation, Calcon Systems was able to use the survey results and recommendations to quickly install and configure the radios and supporting hardware, passing live monitoring and controls data right away. This was not only satisfying for the water district, but worked to accommodate Calcon's tight schedule to complete installation. The link has been consistently reliable since install.

The process followed on this project reflect Elevate Wireless' general practices to ensure optimal results, with the lowest possible risk to the integrator and end user. From these practices, the client was able to enjoy not only an overall cost savings from the switch to a private radio network, but also a significant time savings resulting from thorough onsite testing and evaluation prior to purchase.

For additional information on how we can help you with your communications challenges, please call us at 408-642-5458 or email info@elevatewireless.com.

About the Integrator

Calcon Systems, Inc., founded in 1987, and located in San Ramon, California is a full-service control system integrator, specialized in PLC and SCADA systems, programming, engineering, control panel fabrication, instrumentation, engineering, electrical, and all aspects of control system design, installation, and maintenance. Customer and application specialties include water and wastewater treatment, industrial wastewater, groundwater remediation, manufacturing, food and beverage, etc.

