The City of Shreveport LA Chooses FibeAir IP-20C for High-Capacity SCADA Backhauling

Overview

The City of Shreveport is Louisiana's third largest city. It is home to more than 200,000 people and lies in the center of a larger metropolitan area with a population exceeding 440,000. Shreveport's Department of Water & Sewage operates the city's drinking water facilities as well as all of its wastewater lift stations and wastewater treatment plants. Such a large-scale water system requires constant supervision of water-level indicators and flow meters as well as monitoring of faults and leakages in a distribution system stretching across hundreds of miles of pipes. In 2013, Shreveport's Department of Water & Sewage set out to upgrade its aging SCADA (supervisory control and data acquisition) network with the intention of improving data communication while enabling new, high-end applications.

The Challenge

Shreveport's aging SCADA backhaul network for Backflow Water Prevention was relying on legacy 900 MHz links to carry signals gathered from over 100 programmable logic controllers (PLCs) at its wastewater lift stations. With a total capacity of less than 1Mbps, this network could no longer provide an adequate service level and had to be replaced. As a first stage for the project, the city indicated five main aggregation points which had to be connected in a ring topology.

In order to meet the strict requirements of Shreveport's Department of Water & Sewage, the solution needed to:

- Support high capacity (of at least 250Mbps) to carry a range of new SCADA applications
- Provide a future-proof design to enable smooth and simple upgrades
- Feature high reliability and availability under any weather condition
- Allow for simple maintenance and a low total cost of ownership (TCO)

The Solution

Ceragon's partner, Johnston Technical Services (JTS), an integrated infrastructure solutions provider based in Dallas, Texas, was commissioned by the City of Shreveport to plan, design and install the new SCADA backhaul network. JTS chose to implement the project using Ceragon's advanced FibeAir IP-20C multi-core networking node.

FibeAir IP-20C is a unique gigabit-in-a-box, compact, all-outdoor solution. Its breakthrough multi-core technology employs a parallel radio processing engine to double link performance. This allows the delivery of multi-Gbps capacity on a single frequency channel, setting a new standard for efficient spectrum usage and significantly lowering network operators' total cost of ownership. Launched in December 2012, more than 12,000 FibeAir IP-20C links are already in service – more than half of which are in North America.

> "With Johnston Technical Services and Ceragon, the City of Shreveport was able to upgrade its SCADA network significantly and cost-effectively without interruption of vital services."
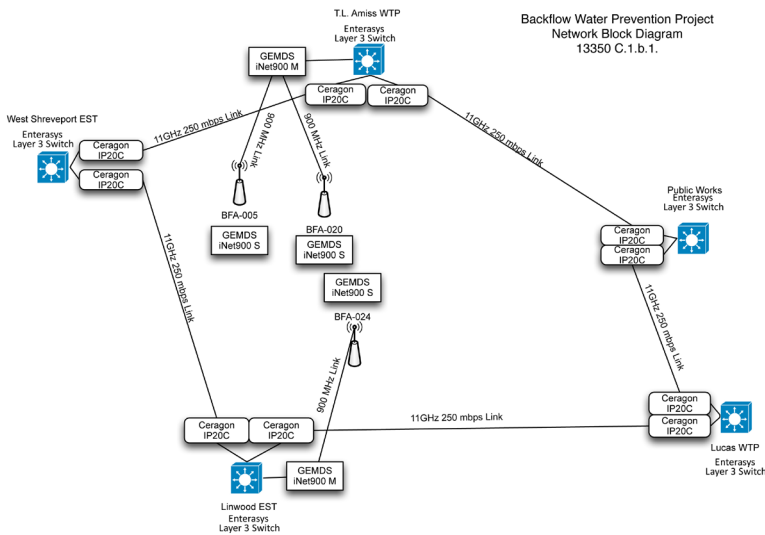>
> Jim C. Johnston,
> JTS CEO

FibeAir IP-20C features a future-proof design and is ready for upgrade from 1+0 to 2+0 (doubling the capacity) from day one. Activating the second transceiver is performed remotely and does not require site visits which can cost several thousands of dollars per visit. The upgrade procedure is simple and requires only upgrading the radio's capacity license and remotely activating the second core (working in XPIC or obtaining another frequency channel).

Implementation

Deploying Ceragon's FibeAir IP-20C, JTS constructed a 5-hop, fault-tolerant ring connecting Shreveport's Backflow Water Prevention sites. Two radios were deployed at each site in East-West configuration and connected to a Layer 3 switch. The entire project, including site-survey, planning, tower build-out and installation, as well as a rigorous testing program, was completed in only three months.

Once in place, the network was tested under a variety of scenarios and its performance was measured carefully and evaluated. The tests proved that Ceragon's FibeAir IP-20C meets and exceeds all of Shreveport's SCADA backhaul network requirements. The FibeAir solution also proved immune to changing weather conditions by implementing Ceragon's eleven-step Adaptive Coding and Modulation (ACM) technique. Planned for 250Mbps capacity, the network can offer peak capacities of 300-350Mbps, 30% higher than the initial requirements.

Shreveport Network Block Diagram

About Johnston Technical Services

Johnston Technical Services, Inc. (JTS) is a US Veteran-owned company and a one-stop shop for the design, planning, installation, maintenance, and monitoring of network infrastructure to support voice, video, and data needs. JTS specializes in turn-key microwave radio installation and maintenance services. With over 26 years of experience in electronic systems integration, JTS provides services to help public and private organizations to quickly and economically reach their networking and systems goals. The company prides itself for its project management, flexibility, and rapid deployment capabilities. www.jts.net

About Ceragon

Ceragon Networks Ltd. (NASDAQ: CRNT) is the #1 high-capacity wireless hauling specialist. We provide innovative, flexible and cost-effective wireless backhaul and fronthaul solutions that enable mobile operators and other wired/wireless service providers to deliver 2G/3G, 4G/LTE and other broadband services to their subscribers. Ceragon's high-capacity, solutions use microwave technology to transfer voice and data traffic while maximizing bandwidth efficiency, to deliver more capacity over longer distances under any deployment scenario. Based on our extensive global experience, Ceragon delivers turnkey solutions that support service provider profitability at every stage of the network lifecycle enabling faster time to revenue, cost-effective operation and simple migration to all-IP networks. As the demand for data pushes the need for ever-increasing capacity, Ceragon is committed to serve the market with unmatched technology and innovation, ensuring effective solutions for the evolving needs of the marketplace. Our solutions are deployed by more than 430 service providers in over 130 countries.

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