



Case Study

Weather-proof Wireless Solutions Bring Peace of Mind to New Orleans' City Planners

The Challenge

When Hurricane Katrina struck in the summer of 2005, New Orleans' city pump sites failed to evacuate water out of the sewage system, thereby flooding the canals and the city itself. A copper and fiber communication system was being used at the time for voice and data transmission between pump sites and the city's mission control center. Due to the excessive flooding New Orleans experienced – and without any back-up facilities – this network was completely destroyed.

Faced with the challenge of constructing a completely new communication network, the city of New Orleans looked to advanced wireless solutions. By choosing a wireless solution, the city of New Orleans saved its engineers a major re-wiring effort that would have otherwise been required to connect remote pumping stations to the city's command post.

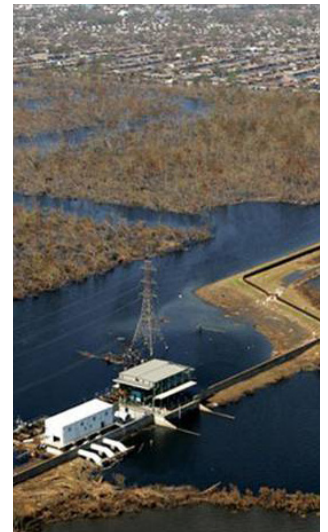
Wireless indeed proved to be a quicker – and less expensive – alternative. Typically, wireless systems have a twelve to eighteen month return on investment, and this was no exception.

An entire network for voice and high-speed data traffic connecting six pumping stations was completed in only three short months. The extra time was mostly taken to reinforce the foundations of communication towers to allow them to withstand category five winds. Additionally, with the microwave solution that was deployed, it is easily upgradeable for future bandwidth needs, so the city of New Orleans can enjoy its benefits for many years to come.

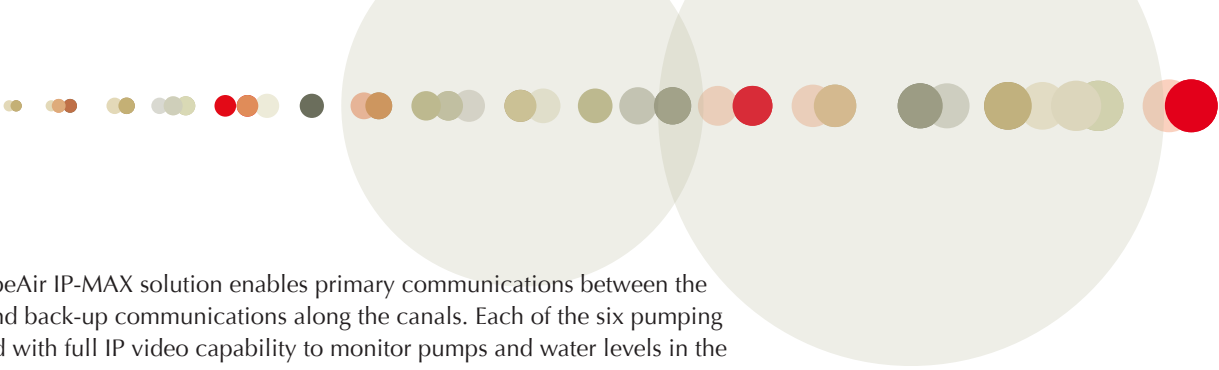
The Solution

For this specific installation of the SCADA communications network, the City of New Orleans chose Ceragon Networks' wireless high-capacity microwave solutions. Deep South Communications, a regional microwave integrator based in Baton Rouge, LA, deployed this solution while providing the turnkey solutions for the microwave and network integration.

Ceragon's wireless radio technology was mounted on towers to support communications between Outfall Control Structures and associated Pumping stations, as well as the Emergency Operations Center in New Orleans. To connect the six pumping stations, a five-path network was put in place. Three of the five paths are used for fail-over back up to fiber interconnects, while the remaining two paths are primary communications interconnecting all site communication.



Following hurricane Katrina, the city of New Orleans built a new Supervisory Control & Data Acquisition (SCADA) communications network using Ceragon's microwave products

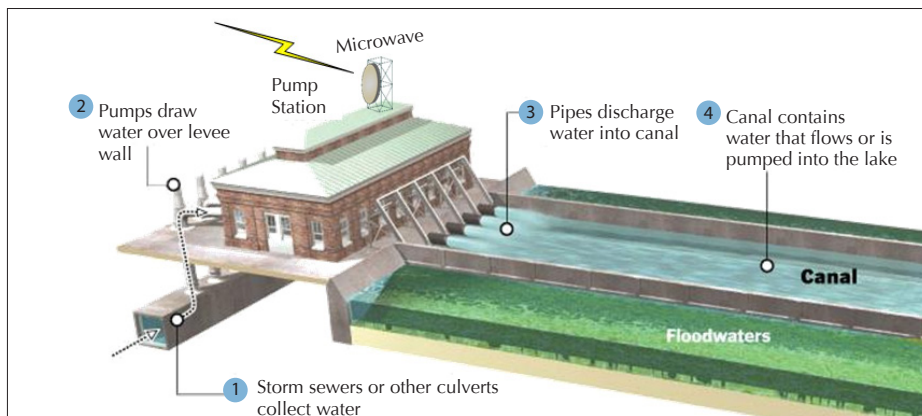


The Ceragon FibeAir IP-MAX solution enables primary communications between the outfall canals and back-up communications along the canals. Each of the six pumping sites is equipped with full IP video capability to monitor pumps and water levels in the canals without interruption. In addition, the system provides telemetry, meter reading, flow/pump control and other data points that are monitored at the site.

The video and SCADA applications are transmitted at fast speeds of up to 50Mbps giving city wastewater personnel crucial real-time data. Back at headquarters, engineers can examine the live footage and compare it with other electronic data. They can talk with on-site personnel and share information gathered at other sites around town in real-time at anytime and under any conditions.



FibeAir IP-MAX², Carrier Ethernet Wireless Solution



Weather proof gear

As a result of the Katrina experience, one of the main conclusions is that one can never be over prepared. In operation since Q1 of 2007, the network's infrastructure and microwave links for wireless communication are designed to withstand a category 5 Hurricane. To ensure continuous communication under extreme winds, redundant antennas were set with rigid antenna mounts and towers designed to withstand 220+ mph winds. The radio frequency (RF) equipment itself was designed for rainfall conditions comparable with those of a Katrina-like storm.

Summary

Needing to reconstruct its SCADA network quickly and cost efficiently during the aftermath of Hurricane Katrina, New Orleans' city engineers opted for a wireless microwave solution. Put in place by Deep South Communication, Ceragon Network's FibeAir IP-MAX solutions already enable high-speed voice and video communication between six pumping sites and the city's mission control center. Guaranteeing continuous voice and data flow even under a category five storm, these advanced solutions help make New Orleans' water and sewage system more reliable – and the city itself a much safer

About Ceragon

Ceragon Networks Ltd. (NASDAQ: CRNT) is a leading provider of high capacity wireless backhaul solutions that enable fiber-like connectivity for SONET/SDH networks, next generation IP-based networks and hybrid networks. Ceragon's FibeAir® family of products support all wired and wireless access technologies and address Service Providers' need to cost-effectively build-out and scale their networks to meet increasing demands for bandwidth and premium services. Ceragon solutions are deployed by more than 150 service providers of all sizes, as well as in hundreds of private networks, in nearly 100 countries. More information is available at www.ceragon.com.