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Case Study

REDBRIDGE COUNCIL

Redbridge Council Relies on BridgeWave's Gigabit Wireless Links for Advanced Public Safety Video Surveillance Network

Redbridge is a 22-square mile outer London borough situated in the north-east of the capital, bordering Waltham Forest, Havering, Newham, Barking and Dagenham and Essex. Known as the "leafy" suburb, Redbridge enjoys one of the best living environments in London and is home to a vibrant multi-cultural community of 257,600 residents. The borough is supported by Redbridge Council, comprised of 8,500 staff members dedicated to providing government support and services with a goal of always making Redbridge a better place to work and live.

Redbridge Council is a three star Council, which means that it has received a top grading from the Audit Commission on its delivery of value for money services to residents. This rating places it in the top ten percent of all councils across the UK.

To preserve its outstanding reputation and three star rating, the Council is diligently working to provide the most rapid response to emergencies while also deterring crime. In particular, video surveillance camera technology has been a means the Council has relied on to proactively deter crime while enabling authorities to monitor activity on Redbridge's streets.

THE CHALLENGE

"We needed a quick and cost effective way to improve the reliability of our existing network and also provide services to some of our remote areas not connected to the fiber network."

Lawrie Morrisson
Group Manager, Electrical Engineering
Redbridge Council

Redbridge knew that video surveillance via closed-circuit television (CCTV) played an essential role in public safety efforts enabling the Council to better see and respond to incidents. The CCTV system in the town center was built using fiber optic cable for connectivity, suitable for existing cameras in the middle of town, however, this did not allow for quick deployment of new cameras nor could fiber provide connectivity to permanent cameras in outlying towns far from the town center's fiber network. Bringing fiber to outlying towns was cost prohibitive due to excessive trenching costs and the inconvenience of digging up roads and diverting traffic.

This being the case, Redbridge first extended its CCTV network infrastructure beyond the town center using low frequency 5 GHz unlicensed radios. Over time, however, the performance of these links degraded, not providing the reliability needed to support the increasing

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bandwidth needs of the CCTV system. Interference increased due to the limited frequency agility of the unlicensed 5 GHz systems, causing degraded camera images, system down time, and adjacent wireless systems being knocked offline, making the CCTV system difficult to manage. Engineers were routinely dispatched to reset the links, further adding to the maintenance of the system.

This situation forced Redbridge to evaluate their options for a more robust and dependable backhaul solution to improve the reliability of the existing CCTV network and extend services to remote areas not serviced by the fiber network.

THE SOLUTION

Redbridge needed a solution that could be implemented quickly and provide a reliable connection from the cameras back to the town center's fiber presence. Given the need to extend network services, greater bandwidth for these CCTV cameras was also high on the list of considerations.

"The system has worked well for us. It has proven to be a reliable and cost effective method of enabling CCTV in remote areas. These areas just wouldn't have CCTV if we hadn't moved to BridgeWave…anything else just would have been too expensive."

802Global, a value added distributor in the UK specializing in digital wireless and surveillance solutions, had previously been one of a number of experts in the field who had suggested BridgeWave as a possible solution for the borough's CCTV network. Redbridge evaluated the options and decided that BridgeWave's gigabit wireless bridges operating in the uncluttered 80 GHz band would eliminate many of the interference issues prevalent in the unlicensed spectrum, as well as provide ample backbone capacity for high quality image transmission. The project was subject to competitive tender and 802Global provided wireless network design and technical support to the successful CCTV contractor.

Redbridge installed five GE80/GE80X 80 GHz, GigE capacity links in the form of a ring and another two links that spurred off of the main ring, thus providing seven nodes that would support base stations to collect local camera feeds in those areas, ultimately providing superb coverage throughout the borough

BENEFITS

Since the first installation, the BridgeWave links have done everything Redbridge wanted them to do in supporting the CCTV network. BridgeWave's 80 GHz links enable Redbridge to achieve gigabit backbone speeds while still providing close to "five-nines" reliability. Another benefit of utilizing BridgeWave's links is their inherent low latency, crucial for real-time video streams of a CCTV system.

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Due to the gigabit capacities, Redbridge has found itself with spare bandwidth, well beyond what is needed for the CCTV network. This future-proof capacity has allowed Redbridge to consider additional uses of this bandwidth windfall, such as supporting the roll out of other applications.

Another advantage to using BridgeWave's equipment is the speed in which the links can be deployed to support new cameras in the CCTV network. With BridgeWave's ease of deployment over fiber, Redbridge can quickly install new crime-prevention surveillance cameras nearly at will.

"This CCTV network could not be allowed to fail because of the amount of money we have invested in it. And, it didn't fail; it worked very well. The network was set up quickly and we're now enjoying a much more reliable CCTV service than we had before."

CUSTOMER: Redbridge Council, http://www.redbridge.gov.uk/ /

INDUSTRY: Government Agency

CHALLENGES:
- Provide high-quality CCTV service to authorities and first-responders
- Ensure easy scalability to extend CCTV to new areas at a moment's notice
- Deploy quickly with minimal maintenance
- Guarantee reliability and performance, but also remain cost-effective

SOLUTION: BridgeWave 80 GHz links

CHANNEL PARTNER: 802Global, a value-added distributor of wireless solutions based in Berkshire, U.K., http://www.802global.com/

BENEFITS:
- Provides full-rate gigabit connectivity for high-resolution images
- Low latency essential for real-time video streams
- Interference-free connections due to uncluttered 80 GHz frequency band
- Rapid deployment enables fast provisioning of new cameras or bringing new areas online

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