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EtherWAN Network Infrastructure for Monitoring Systems Used in Resort Construction

Overview

Metropolitan areas are expanding as a result of rapid population and economic growth, and this has increased the demand for new resorts. Real-time monitoring systems are particularly helpful during the process of reviewing, developing and imposing plans on new development areas, allowing decisions and actions to be taken on a daily basis during the land development process. Once construction begins, progress can be automatically reported through a real-time monitoring system backed by Ethernet technology. How can this process be effectively managed? EtherWAN worked with solution partners in Asia to form a complete real-time monitoring system for a hillside resort development.
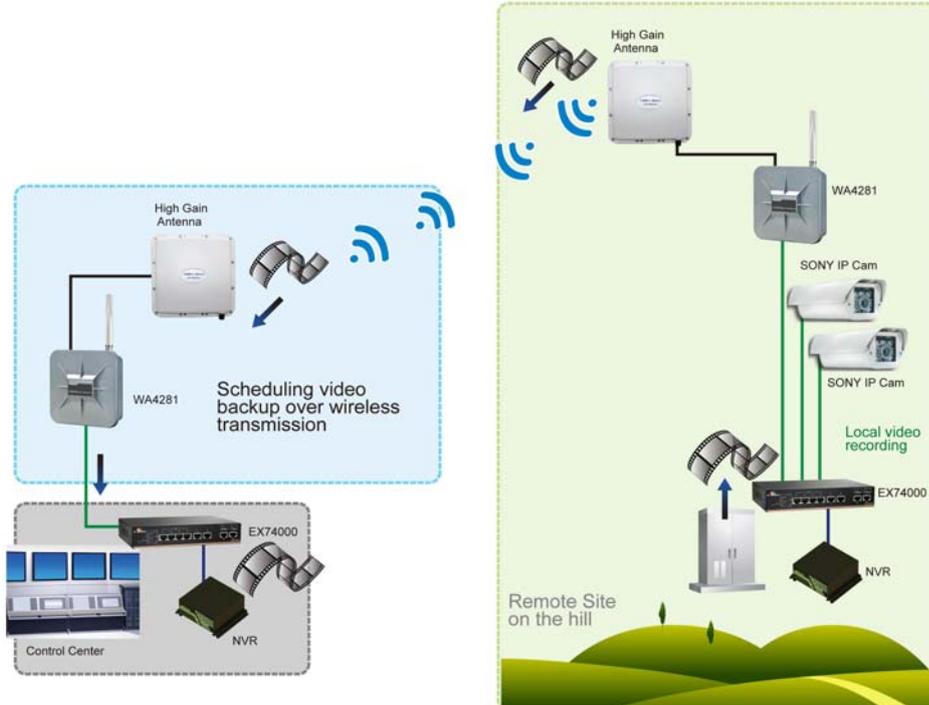
Technology

There was no infrastructure in this parcel of undeveloped land, and power sources were either not available or were limited. Therefore, wireless data transmission and PoE networking (Power over Ethernet) were the key technologies used to create this solution. There were two to three cameras installed in each zone, and each camera was connected to a PoE PSE managed switch. Some zones used speed dome cameras, which consume more power, while other zones used regular cameras. In order to satisfy all scenarios, the PoE PSE managed switch needed to be compliant with IEEE802.3af with high-power support. All of the different zones were connected via the PoE PSE managed switch to form a ring topology, thus guaranteeing network redundancy. All of the captured images were stored in an NVR, which was directly connected to the PoE PSE switch.

Challenges

All of the network equipment was installed outdoors; therefore, a rugged design in terms of the IP rating and a wider operating temperature range were all must. Due to space concerns, the PoE switch and the NVR were installed in a compact box. Therefore, the size of all related networking units also had to be minimized. As seamless data transmission and smooth image delivery were required from the wireless devices, their proper installation, including the appropriate antenna selection and installation angle, was crucial in order to deliver the best results.

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Solution

Result

The solution was initially installed in one zone only, in order to guarantee that the wireless data transmission was satisfactory. After one month of positive results from the field tests, the solution was established in other zones. The resort investors were now able to view the construction progress at anytime and obtain real-time updates. This solution has become a service available to all resort investors.

Products from EtherWAN

WA4281
Hardened IP68 Dual Radio Multi-function PoE Wireless Device

EX74262-0VT
Hardened Managed Ethernet Switch with 6-port 10/100TX (4-port IEEE802.3af high-power 30W/ea) + 2-port Gigabit SFP combo A