IVC APPLICATION NOTE:

Remote Construction Site Monitoring

Wireless networking technologies and scalable IP-based video systems have converged to now provide the ability for construction managers and other stakeholders to remotely monitor progress at construction projects of any size and any number. IVC's IP-based camera systems were chosen by a major construction and engineering firm to monitor the construction of a state-of-the-art carbon and stainless steel plant in Alabama. One goal of the system is to minimize the number of on-site visits by project managers who are based in another part of the country. Another goal of the system is to make available live or recorded video status records of the project's progress to other stakeholders. These might include company executives, subcontractors, local, state, and federal agencies, and the public at large.

IVC's IP-based camera system was installed to monitor the construction progress of the $3.7 billion project that is due to be completed sometime in 2010. The IVC system was chosen to monitor and document the construction progress, machinery, and security of the project from the main offices of the steel company, located 30 miles away from the job site. IVC's cameras and video management software provides the tools necessary for project managers, engineers, executives, and security personnel to monitor the job remotely thereby reducing transportation costs and maximizing response time in case of any events.

Six IVC outdoor PTZ cameras with 18x zoom were efficiently and quickly deployed around the job site on an infrastructure provided by a 5.8 GHz point-to-multipoint wireless network. The choice of the wireless network reduced the per-camera deployment costs and provided the system the flexibility required as the plant was erected. The cameras could be easily and quickly redeployed as the requirements changed. Each camera connects to a subscriber unit that uplinks the IP video to its corresponding access point located at the on-site offices. Two wireless access points provide connectivity to a network switch that is connected to the company's WAN. The access points are configured using orthogonal frequency channels and use omni-directional antennas with different polarization for transmission. The integrated spectrum analysis feature of the radios provides an easy-to-use site survey tool and expedites the deployment of the wireless network. The high zoom level in the cameras allow for detailed monitoring of objects and face recognition of people visiting or working at the site.

Through the IVC Relay Server software, the IVC cameras can be viewed and controlled from any computer in the client's network and through the Internet by using a web browser. The software was conveniently installed in an existing PC attached to the network decreasing maintenance and hardware costs. In this scenario, the use of panoramic views and presets through a user friendly web interface became a very valued and efficient way of controlling the PTZ cameras. The point can click function works optimally under low bandwidth situations.

IVC's View Station client software is used to provide an unlimited number of customized multi-up displays, the ability to define camera tours and related activities based on numerous schedules, event-based and scheduled recording, and alarm management. The scalable nature of the system allows it to be easily transitioned from construction monitoring to security and/or process monitoring duties. Additional cameras and even additional construction sites can be added to the system as the company's requirements change.

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