Mexico Tower Operator Deploys Kentrox for Site Security

The wireless communications market is developed in many countries of the world and saturated with multiple service providers. In Mexico, however, the telecommunications market is still underdeveloped with low penetration rates and a limited number of service providers. This is in the process of changing with increased competition and the launch of LTE technology that is encouraging additional investment. With these changes and the potential for reduced costs of services, the wireless communications market is expected to reach approximately 107 million mobile subscriber connections by 2015[1].

Unfortunately vandalism, theft, and assaults are common in Mexico, and this is true for the telecommunications industry as well. Tower owners are continually faced with two critical challenges at their sites: personnel safety and protecting site assets.

A Tier 1 tower operator in Mexico was experiencing theft and vandalism at their top 500 sites almost daily (copper theft, stolen site equipment, graffiti, etc.). This operator has chosen the Kentrox intelligent site management solution to reduce theft and vandalism at their tower sites, minimizing the cost of replacement equipment, repairs, and cleanup. Additionally, by implementing site security, personnel visits (both employees and contractors) are safer.

The Kentrox applications utilized by this Tier 1 operator include:

- Access management
- Asset tampering
- Surveillance management
- Aircraft warning light monitoring

The network
TThe Optima management system, Remote RMM-1400s, and Remote RMB-1s by Kentrox have been deployed in the tower operator's network. Optima centralizes and monitors all measurement, alarm, and fault data from the RMM-1400s at each remote site. The Kentrox solution trends the site data and provides detailed reports on site performance. The data obtained from the remote sites is transferred to the centralized Optima management system over a secure GSM cellular network connection.

The Remote suite of products is located at the tower operator's sites and is monitoring personnel access, motion sensors, video cameras, vibration sensors, and copper theft sensors. Monitoring site access at remote sites is critically important. The Kentrox access management application monitors the access to a site (authorized and unauthorized) and specific areas within the site (shelters, gates, fences, and access doors). When unauthorized entry occurs, which is a common occurrence, the Network Operations Center (NOC) operator is notified via alarm(s), and a siren is triggered locally which can scare off a potential intruder. The siren continues until someone either grants access (enabled remotely after personnel verification) or authorities have arrived onsite. The tower operator is also installing keypad controllers at each site door, and the access data will be transferred to a centralized access control database using the Kentrox solution.

Copper conductors, waveguides, and ground bars are the most commonly stolen critical infrastructure equipment at a site. The asset tampering application monitors a ground bar for tampering or theft. An asset tampering sensor is installed and cannot be removed or cut without triggering an alarm. If disturbed, the tower operator receives an alarm and uses this information to determine what action is appropriate and may elect to use IP video to capture images of site conditions and the details of the perpetrator for potential prosecution and asset recovery.

Unauthorized access and theft to tower sites are a common occurrence in Mexico and cause a considerable amount of damage, repair costs, and equipment replacement.
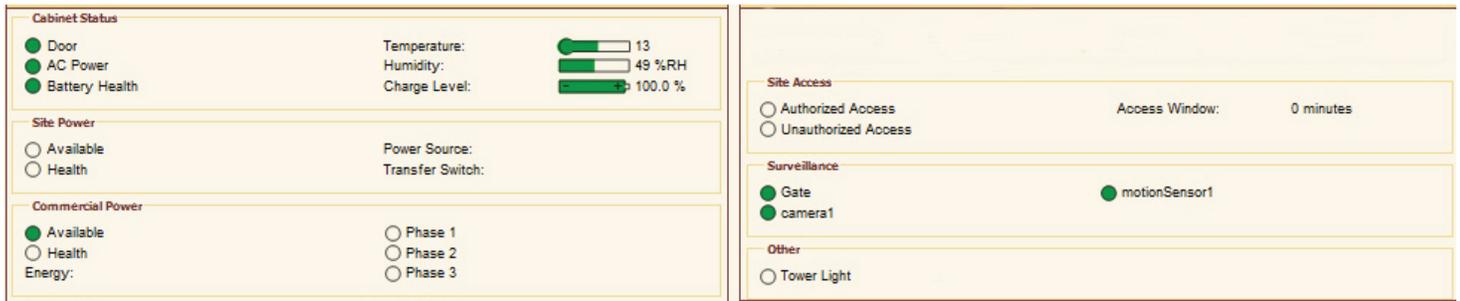
Live View report from Optima showing status of site conditions and applications in the Mexico deployment.

The operator has both IP video cameras and exterior motion sensors installed at most locations, and the Kentrox solution is remotely monitoring the sites using video surveillance and motion detection. When motion is detected, an alarm is triggered and both the NOC and local authorities are notified via email and SMS. The video images may be sent to a centralized FTP server where authorized personnel can view or download the details.

Authorized users can access the cameras remotely to make configuration changes. If a site visit is required for any reason, remote personnel can adjust the camera's pan/tilt/zoom option to ensure the site is safe to access and verify that the personnel have been approved for entry.

Aircraft lighting on towers is critical to ensure the safety of the tower itself, personnel, and aircraft. The tower operator is monitoring the operational status of the tower lights remotely utilizing the Kentrox solution to ensure the light is properly functioning. If the light fails for any reason, the operator is automatically notified via an alarm.

The benefits

The Kentrox intelligent site management solution deployed at this Mexican Tier 1 tower operator has produced many benefits. Providing security at the site was the biggest benefit to minimize costly theft and vandalism. Remote monitoring, management, and control have significantly reduced the number of truck rolls required. Once the NOC or a technician receives an alarm, they can remotely access site data – from virtually anywhere – to decide how to proceed. If a site visit is required, personnel safety is improved.

The tower operator can also use the security management solution to ensure that site work being provided by outside contractors is ongoing and/or completed. For example, the operator uses the site access logs to determine who visited the site and for how long. The operator can view video or images to ensure the work submitted for payment was actually completed during the site visit.

Kentrox provided installation services to this Tier 1 tower operator to train their local installers and partners. The installation services focused on empowering the key installers and technicians with the expertise needed to achieve a smooth and successful turn-up of the entire Kentrox solution. This allowed the operator to be confident that the solution would be running at an optimal level from the beginning using local installation resources.

The Tier 1 tower operator's customers (i.e. service providers) are also concerned about the security of the sites because this can affect network availability. The NOC personnel utilize this opportunity to showcase the comprehensive site security solution to minimize safety concerns.

In addition to the many benefits of the security management solution already deployed, the Tier 1 tower operator is considering other Kentrox functionality for future installation to ensure a comprehensive solution. This includes generator management, HVAC monitoring, HVAC energy monitoring, and HVAC control. As the tower operator's requirements change, Kentrox will engineer and provide the solutions needed to maximize network quality and availability while minimizing operating costs.

For more information, visit www.kentrox.com, email info@kentrox.com or call 800-733-5511 or +1 614 798 2000.

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