

Remote Site Management

Kentrox Site Management solutions enhance the monitoring of critical components by ensuring that the day-to-day management of sites is more efficient and that periodic and preventive maintenance of critical ancillary components is more effective.

Operations management is the term used to describe the responsibilities of Operations Directors, managers, and field technicians in their continuous quest to ensure network quality and service performance at the very edge of a wireless network. Operations management incorporates:

- Site and component management
- Alarm monitoring/issue identification and resolution
- Periodic preventative maintenance

In many cases, the same personnel may also be responsible for systems/service performance, technology evolution, and site access.

Today, many of these tasks are performed through physical visits to cell sites and microwave locations, leading to inefficiencies that are only now becoming apparent.

Operations Management challenges arise when considering the complexity of each site and that a single technician is responsible for upwards of 50 such locations. Invariably, the sheer number of trouble tickets raised and consequential site visits results in inefficient use of highly skilled technician time.

How efficient operations management relates to the corporate goals of wireless service providers

The goal of an operations team is to ensure a highly-reliable, quality-rich network, devoid of outages, dropped calls, or poor data throughput. Their daily contribution is directly felt by subscribers who have numerous alternative options for wireless coverage. Simply stated: effective operations management, able to anticipate and react to service degradation, is critical to customer retention and churn management. Network issues are unavoidable and no network is perfect, but much can be done to reduce mean time to repair (MTTR) and ensure high service quality.

Meet the operational goals of wireless service providers

- Outage reduction: receive proactive warnings when temperature reaches specific levels and battery charge or fuel levels are below required levels
- Compliance initiatives: access and maintain generator maintenance logs; receive notifications when generator run time reached certain thresholds (per state/EPA mandates); meet FAA tower light mandates
- Technician efficiencies: reduce MTTR through remote troubleshooting; reduce technician truck rolls, increase productivity and ultimately, network quality
- Network/network element alarming: remotely access a more granular level of alarming information to eliminate potential false positives and identify root problems; remote manage what used to be a dispatch; improve network quality/customer experience
- Expense reduction: reduce unnecessary site visits by resolving site problems remotely or allowing resolution in single site visit

Without Remote Site Management	With Remote Site Management
Technicians struggle to maintain the network when ratio of techs to sites is over 1:40	Technicians are able to maintain over 60 sites through more efficient use of time
Site visits are necessary ~ 80% of the time	Site visits can be reduced by 40-50% resulting in significant OpEx cost savings and releasing funds for CapEx growth
(R)NOC Alarms are often vague and result in site visit to determine root cause	Technician can remotely 'view' site / equipment conditions to clearly identify existing and impending issues
MTTR is dependent upon physical presence at a site (i.e. longer)	MTTR can be reduced greatly through remote issue resolution and 'intelligent' site dispatches
Technicians are not as efficient as they could be	Technician time is utilized efficiently allowing more time for network/technology growth
Preventive maintenance is often side-lined in favor of other 'priorities'	Preventive maintenance is a reality that may minimize outages in extreme conditions (inclement weather, power outages etc)
Overtime is not in line with corporate objectives	Overtime is managed to acceptable minimums

Common Misconceptions

Base station monitoring is 'enough'

Providing remote alarming via a base station provides for vague and often misleading information. To ensure a quality dispatch with a one-time visit, alarms from auxiliary components such as generators requires more granular alarming. Also a base station does not support bi-directional control of resources.

Preventive maintenance is 'nice to have'

Failure of a communications system in a time of need is unacceptable in the eyes of today's subscribers. Preventive maintenance ensures that backup power, connectivity, and ultimately service is available when and where required.

Remote Site Management reduces workforce needs

Kentrox RSM solutions significantly increase the efficiency of existing technicians to meet ever-increasing site responsibilities and complexity.

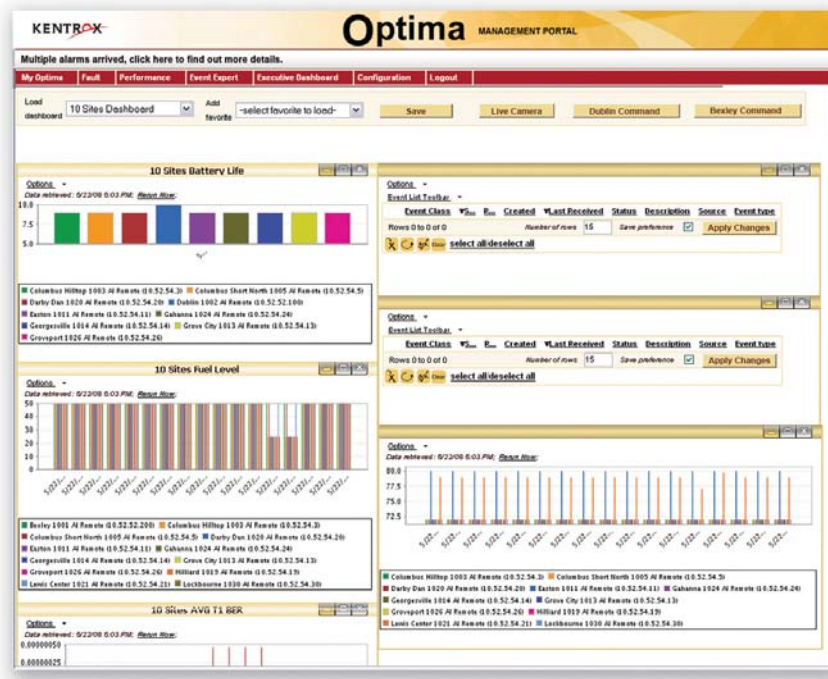
Scalability and Access

The Kentrox Remote Site Management solution comprises a compact 1RU Remote device installed at each remote location. This device may be accessed via the operations Data Communications Network (DCN) or wirelessly, using a 3G air-card and is able to notify NOC applications of remote site issues via SNMP traps.

Multiple Remote deployments are managed through Optima Management Portal – a navigation application that provides secure and consistent connectivity to remote sites and facilities.

Site Management Applications

- Remote access via wireline or wireless backhaul
- Microwave radio management
- Base station monitoring
- Generator monitoring and control
- Local, secure intranet access
- RET antenna control
- Tower light monitoring
- Power system monitoring
- Battery plant monitoring
- Environmental monitoring
- Physical security
- Safety monitoring
- Proactive alarm notifications



Remote RMX-3200

Optima dashboard

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