



Who is Suitelife Systems?

Suitelife Systems has over two decades of experience providing industry-leading Advanced MMC Systems to broadcasters around the world.

Our software-driven approach offers unmatched scalability and adaptability, all housed within the industry's smallest footprints.

A few of the companies using our solutions:

TEGNA

CBS 

NBCUniversal

SBG
SINCLAIR BROADCAST GROUP


UNIVISION

COX MEDIA
GROUP

FOX
FOX TELEVISION STATIONS, INC.

 **PBS**

HSN

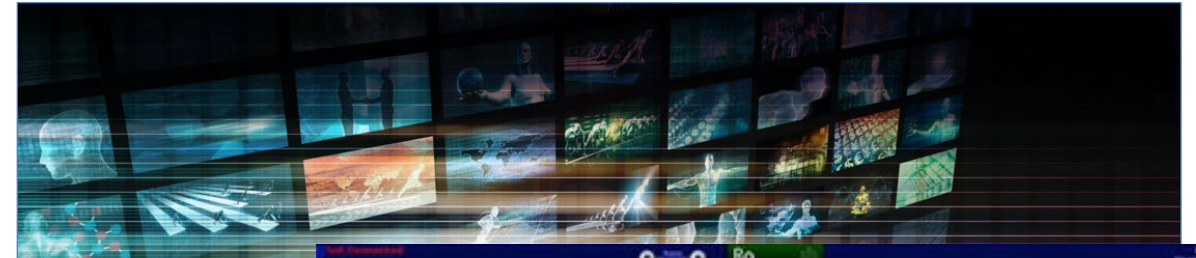
City of
SACRAMENTO

Extensive Experience Matters

The first Axxess system was deployed in 2002, for the NBC Hub 1.0, a recognized broadcast industry first. Since then Suitelife Systems has provided ground-breaking, and industry-leading systems across the nation.

Operational since 2010, Fox Television's deployment of Axxess is established at their Las Vegas Hub. This system monitors IT infrastructure at the hub supporting ITX content playout to each station, then signal path device monitoring to each transmitter.

Axxess installations in the thousands are still operational for more than 15 years, maintained and supported, each system with it's own history of successful fault management victories, defeating failures.



Suitelife Systems *Monitoring & Management*

Advanced Monitoring & Control Use Cases

Manage. Monitor. Control.

Overview

Suitelife Systems Active Monitoring

Fault Management & Monitoring Functional Objectives

- Increase visibility of operational information – technology & facility performance awareness
- Improve operational efficiencies
- Increase fault event response effectiveness
- Elevate overall operational confidence
 - Preempt fault event occurrences
 - Programmable alerts & notifications
 - Know what is happening when
 - Enable better trouble shooting & recovery



Overview

Suitelife Systems Active Monitoring

Key Features & Capabilities

- Monitoring by Exception – Provide operations a view of only primary concerns.
 - Root cause filtering: Present alarms caused by the root source of the problem, not subsequent alarms caused by the failure
- Intelligent Interfacing – Using modern device connection protocols such as RESTful API, SNMP, TCP-IP, BACnet for aggregating key datapoints
- Automation – Utilizing if/then Boolean logic to manage fail-overs of technology and facility operational concerns for staying on the air
- Northbound Data / API Integration – Share aggregated fault data and logs to enterprise dashboard for a more complete picture of operations



Desired Data Points

Each broadcast media client has unique requirements

Each opportunity presents unique challenges

What are the broadcast operation desired data points?

Which of these datapoints are most critical to your operation?

It's your world, control it your way.



Suitelife Systems

Remote Site Use Cases

Our software approach yields better hardware solutions.

Manage. Monitor. Control.

Suitelife Systems - Transmission Management

Protect Content Delivery

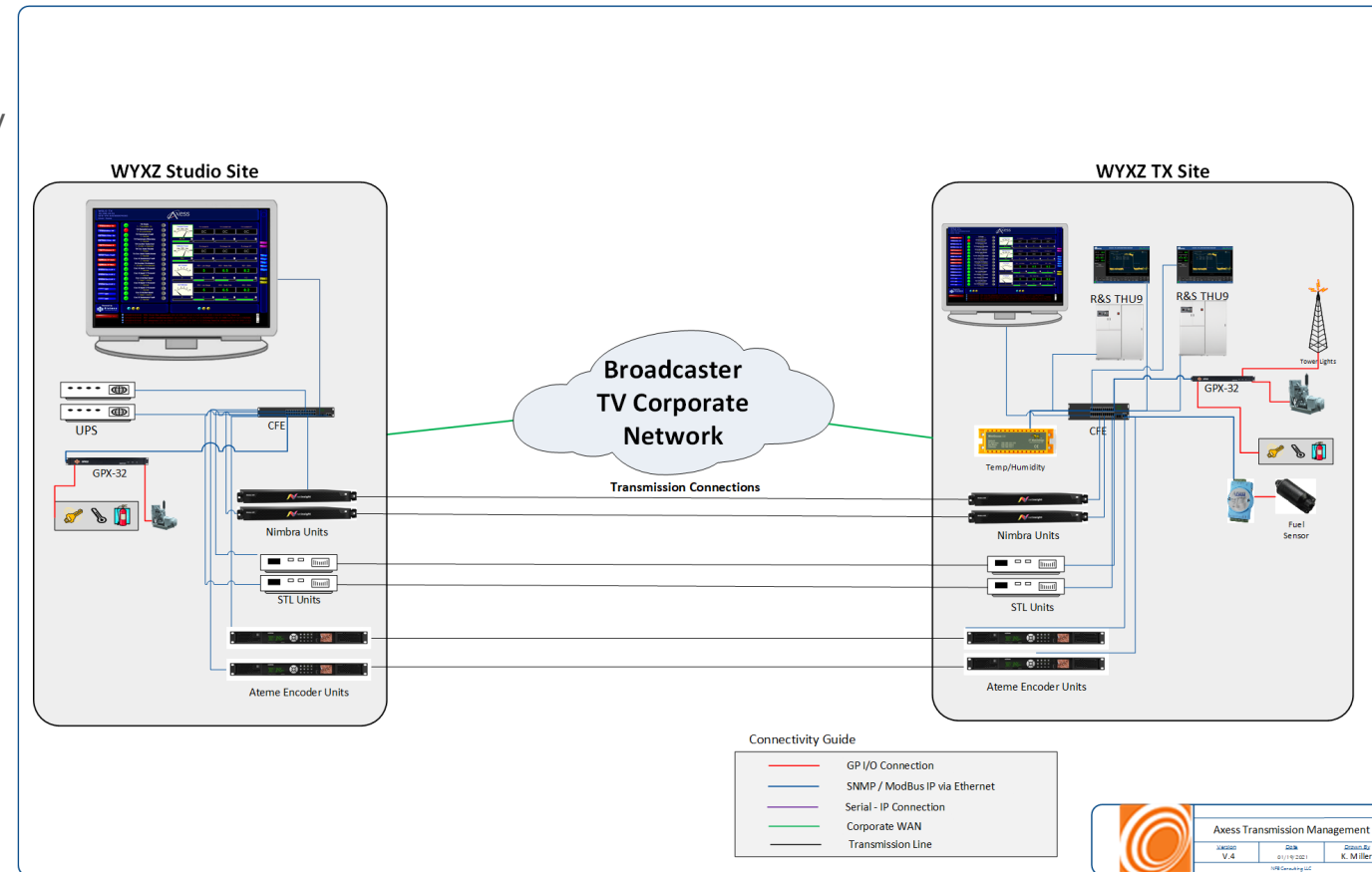
- Utilize Programmable Automation
 - A & B transmission paths - failover of every transmission type
 - Microwave / STL
 - IP Encoded Signals
 - Fiber

SCL macros in real time action

- Signal path switching occurs with cautionary/extreme fault event or transmission device failure

Programmable communications of all operational conditions

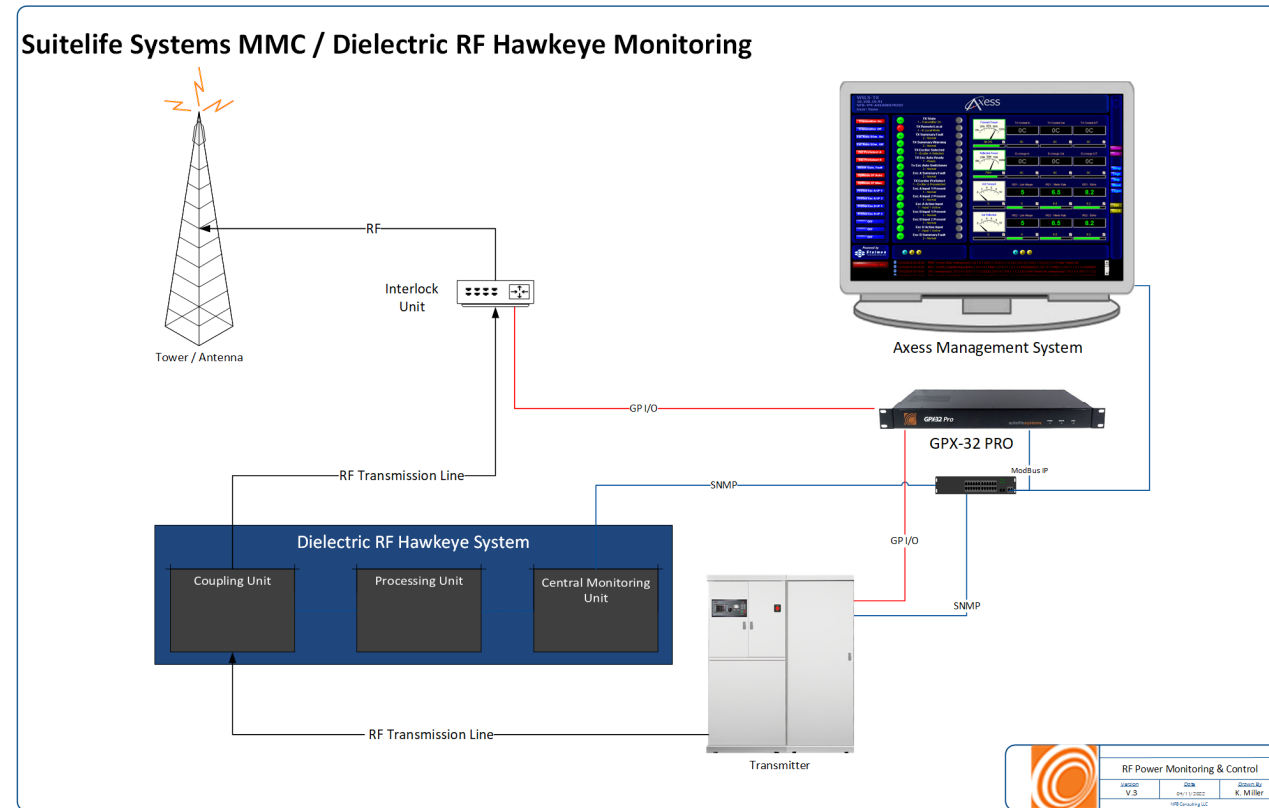
- SMS, Email, OVI screen with audible alarms



Suitelife Systems - RF Power Monitoring

Protect Transmission Systems

- Axess Integration with RF Power monitoring units presenting real time data prevents catastrophic RF Power events
 - SNMP integration of RF Hawkeye Systems protects transmitters and RF transmission lines
 - Manages response to potential undetected line degradation
 - Monitors forward and reflective power on transmission lines, after transmitter output
 - Logs any changes with a location and time/date stamp
- Integration of RF Power Monitoring application into Axess OVI screen with programmable alarms
- Automated control based on user defined parameters



Suitelife Systems - RF System Performance

Protect Transmission Systems

RF Monitoring & Control

- RF Infrastructure and Mode Management
- Switch control interfacing
- Forward, reflective power performance
- Antenna control
- Temp sensors for reject load management

RF Performance

- Integrate with Avateq for consolidated fault management

Coolant Monitoring

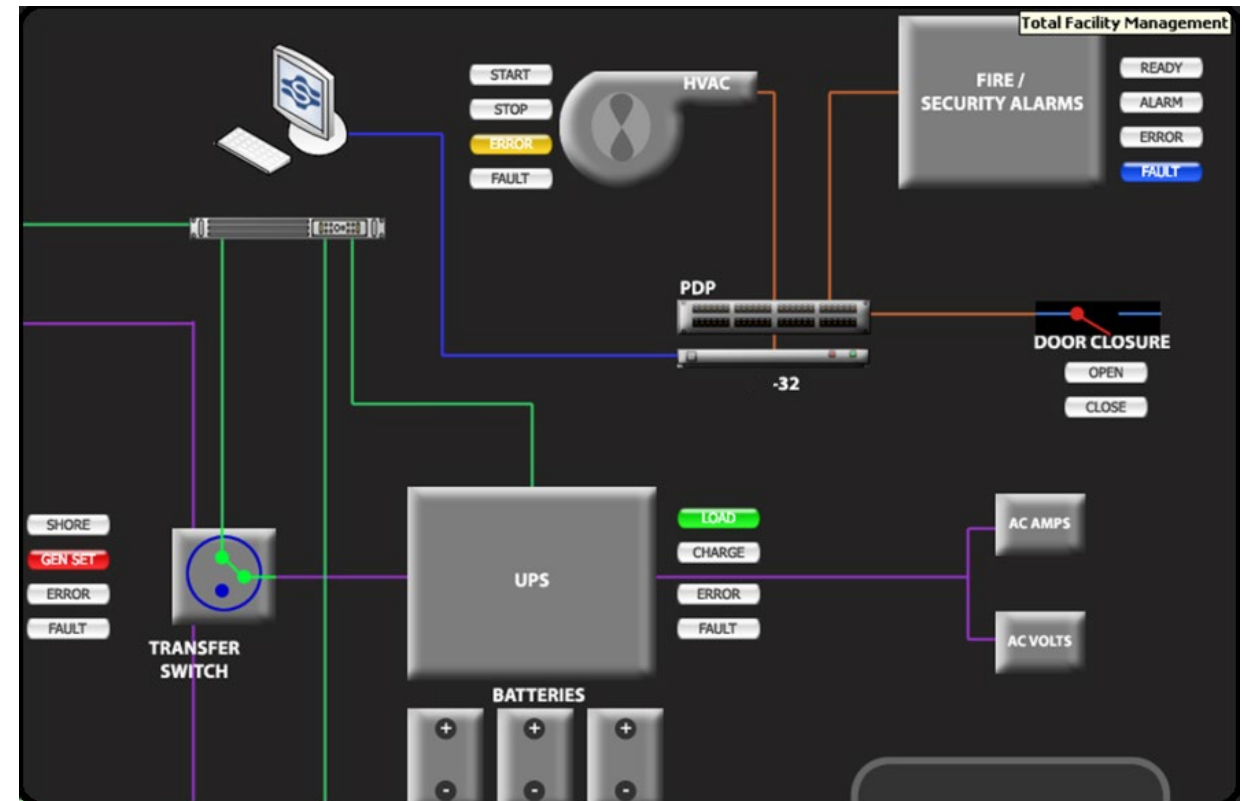
- Nitrogen line pressure
- Coolant flow switch control & pump on/off
- Transmission line temp



Suitelife Systems - Remote Site Power Monitoring

Power Monitoring & Management

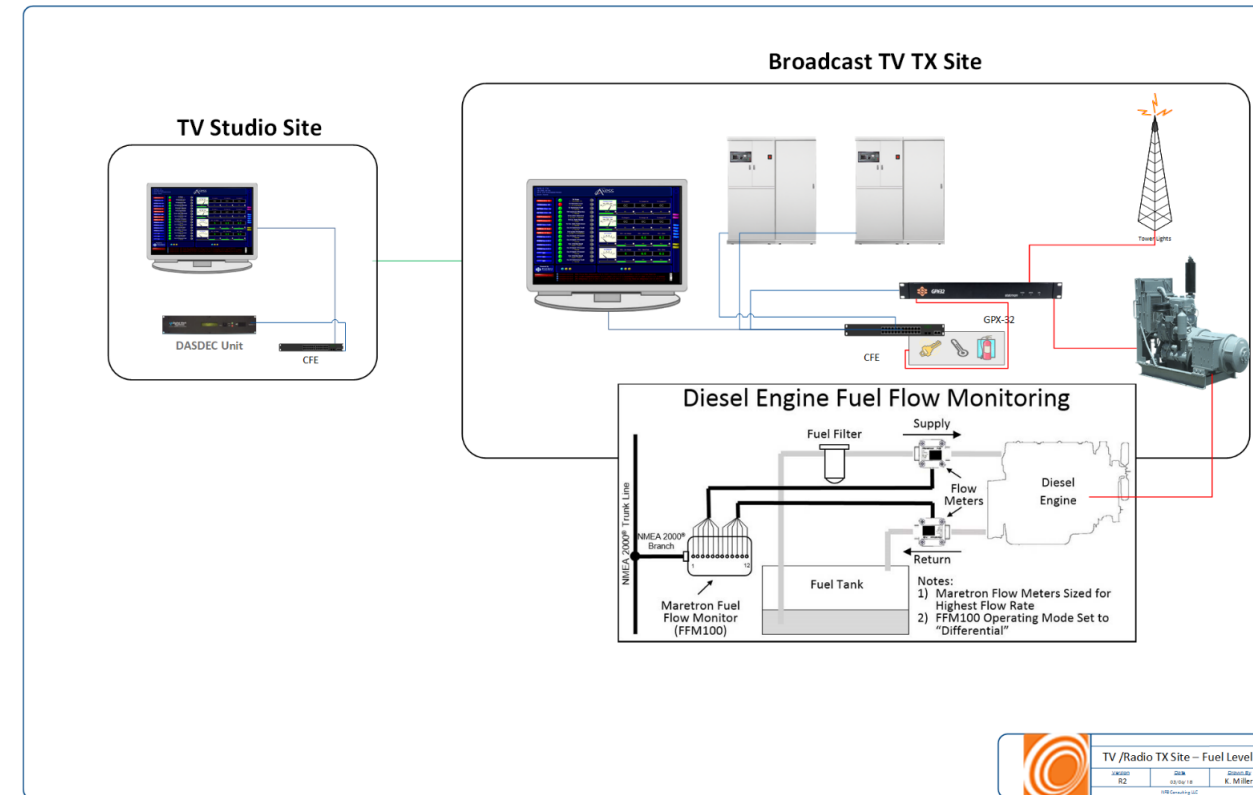
- Take advantage of Axess programmable notifications and flexible alarm levels
 - Monitor incoming main power with 3-leg sensors, 250v or 480v
 - Automate failovers from shore power to generator
 - Based on impending weather events
 - Power level fluctuations
- Receive notifications from genset & UPS systems
 - Power on
 - Return to shore power
 - Run time



Suitelife Systems - Remote Site Power Monitoring

Power Monitoring & Management

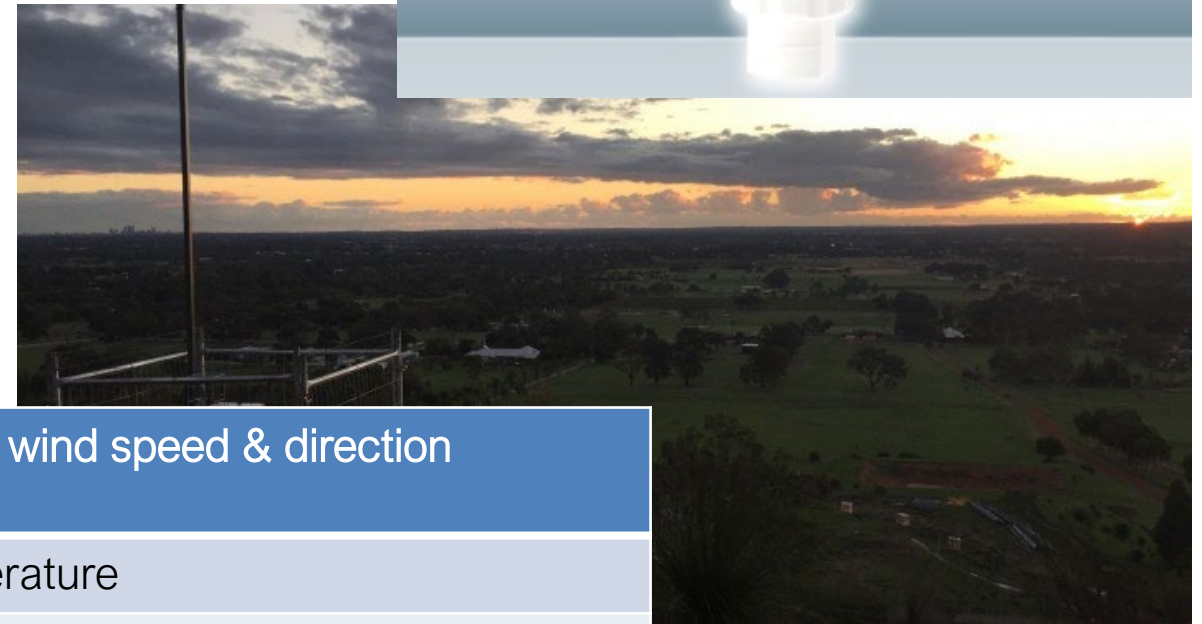
- Monitor generator fuel levels
 - Programmable SMS & email messages of cautionary fuel levels
 - Integrate with flow sensors to measure every drop
 - Add metering or fluid visuals to OVI screens
- Automate orders via email for fuel service deliveries based on cautionary fuel level thresholds



Suitelife Systems - Remote Site Monitoring

Weather Management

- Access integration of weather data systems to preempt outages
 - Identify quickly the root cause of any fault
 - Fire up generator for impending thunder storm events
 - Manage HVAC systems to offset extreme external temperatures
- Utilize weather stations for managing remote sites



Ultrasonic wind readings up to (92 MPH)	Apparent wind speed & direction
Barometric pressure	Air temperature
Wind chill temperature	Dew point & heat index temperature

Suitelife Systems - Remote Site Monitoring

Site Environment

- Ambient temperature, humidity, dew point site conditions
- Strategically placed water sensors
- Smart thermostat integration

Integration of disparate systems

- BACnet System integration (BMS)
- BACnet devices
- HVAC System



Suitelife Systems *Advanced MMC Use Cases*

Our software approach yields better hardware solutions.

Manage. Monitor. Control.

Suitelife Systems – Multi-Site Management

Remote Site Fault Management

- Operator Visuals and audible alarms enable key operational datapoint monitoring in each remote market & site
 - Studio & TX Site
- Hub operators assist local engineers identifying root cause of technical problems
- Hub operators confirm automated failover occurrences
- Scheduled failover device testing ensures readiness
- Monitoring by exception enables intelligent fault management, focusing on the events that matter most.

The screenshot displays the rOVing Multi-Site Management interface. The top bar shows the connection status: 'Connected: CBS-NOC(NOC 1)' with IP '10.24.13.86' and 'CBS-AXS-WS-01-rOVing'. The interface is divided into two main sections: 'STUDIO' and 'TRANSMITTER'. Each section lists various markets with their respective call letters and status indicators (green for good, red with a '1' for a fault, and blue with a '9' for connection loss). The 'TRANSMITTER' section also includes a 'W Org' status.

STUDIO		TRANSMITTER	
2 WCBS	WLNY	1 WTC	1 W Org
WUPA		WLNY	
2 WFOR	2 WBFS	WUPA	
2 WBZ	2 WSBK	1 WFOR/WBFS	
KSTW		1 WBZ	WSBK
KPIX	KBCW	KSTW	
KCBS	KCAL	KPIX	KBCW
KOVR	KMAX	1 KCAL	KCBS
2 WTOG		1 KOVR	KMAX
2 KYW	1 WPSG	1 WTOG	
2 KCNC		KYW	WPSG
2 WJZ		1 KCNC	
2 KDKA	2 WPCW	2 WJZ	
WBBM		1 KDKA	1 WPCW
WWJ	WKBD	1 WBBM	
WCCO		WWJ	1 WKBD
9 KTVT	9 KTXA	1 WCCO	
	CONNECTION LOST	9 KTVT	

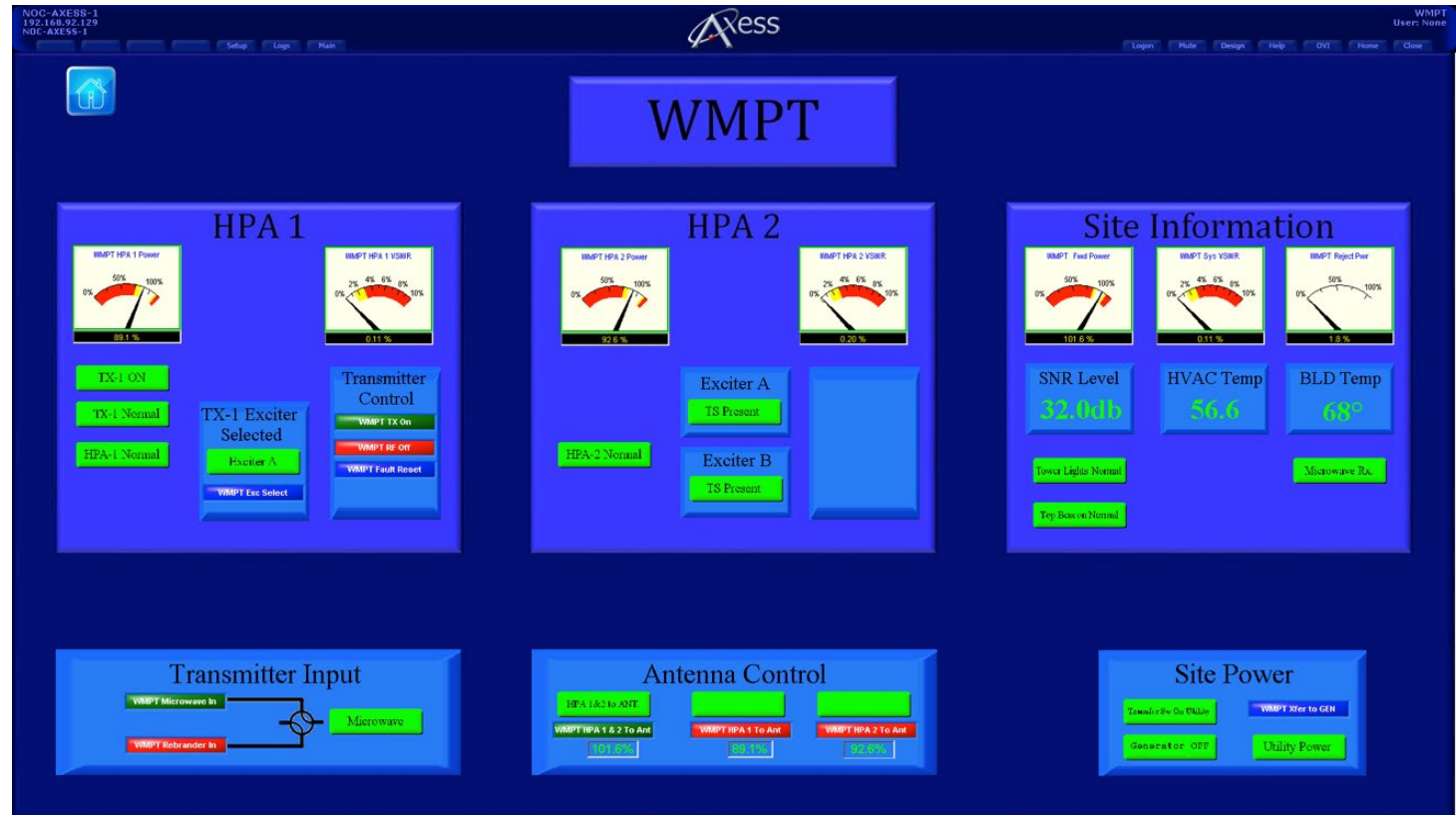
Suitelife Systems – Remote Site Monitoring & Control

Remote TX Site Data Points

- Drill downs to each site for remote operator control

TX On	TX RF on
TX Reset	TX1 select EXC A
TX1 select EXC B	TX1 to ANT
TX2 to ANT	XFER to GEN
Microwave TX In	Re-brand TX In

- Site information conditions:
 - Power
 - HVAC & Building Temperature
 - Tower Lights



Suitelife Systems – EAS Management

Remote EAS Management

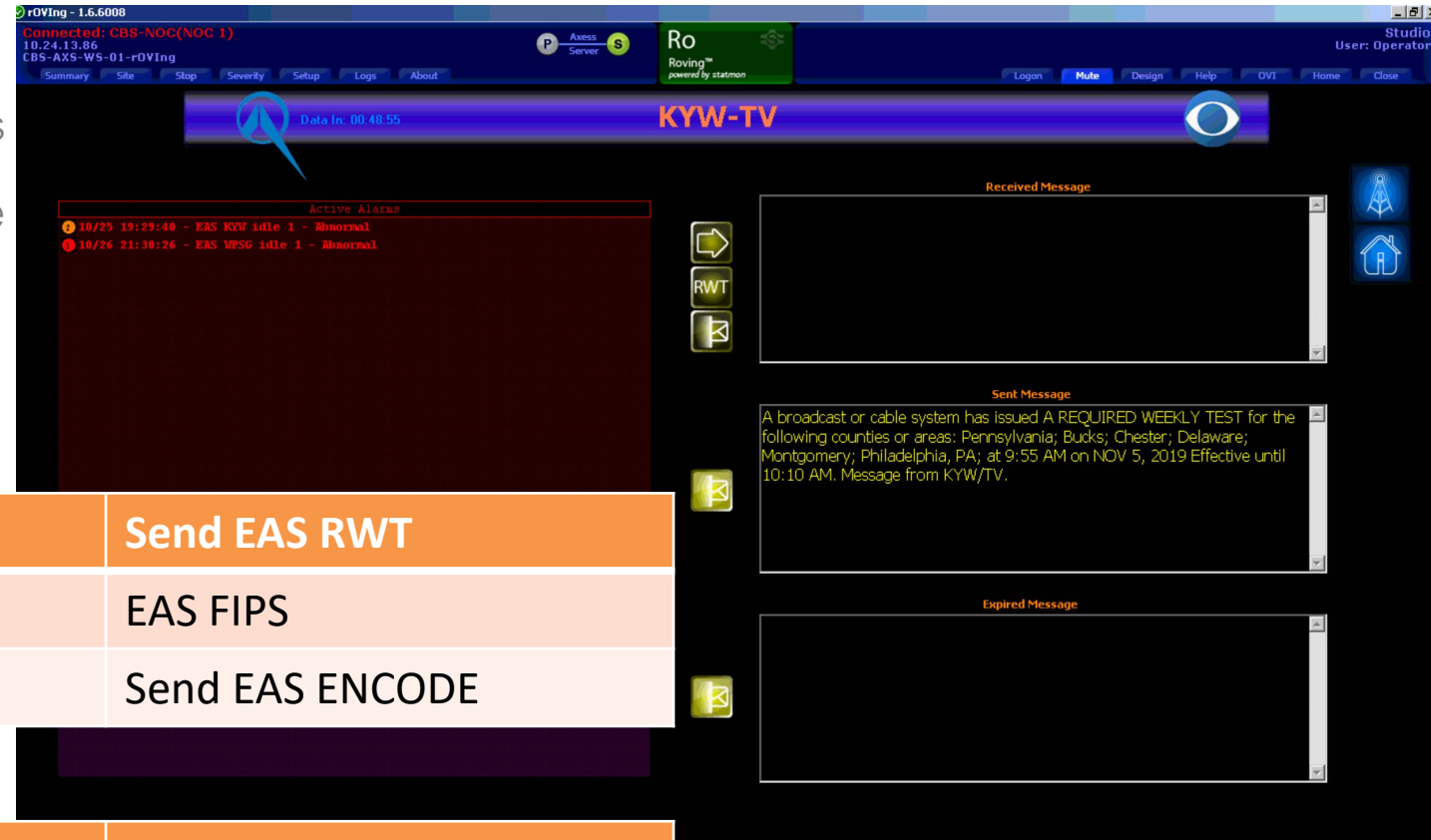
- In the Hub NOC application remote operators manage EAS event on behalf of DoE during off hours
- Operators / Engineers acknowledge EAS Event once alarmed by MMC system
- Recorded as an event in the MMC Log Reports

Control Datapoints

Manual Forward	Clear EAS Message	Send EAS RWT
Clear EAS Message	EAS Event Code	EAS FIPS
EAS Duration	Send Event Code-RWT	Send EAS ENCODE

Status Datapoints

EAS Idle	EAS Message Transmitting	EAS Message Received
-----------------	---------------------------------	-----------------------------



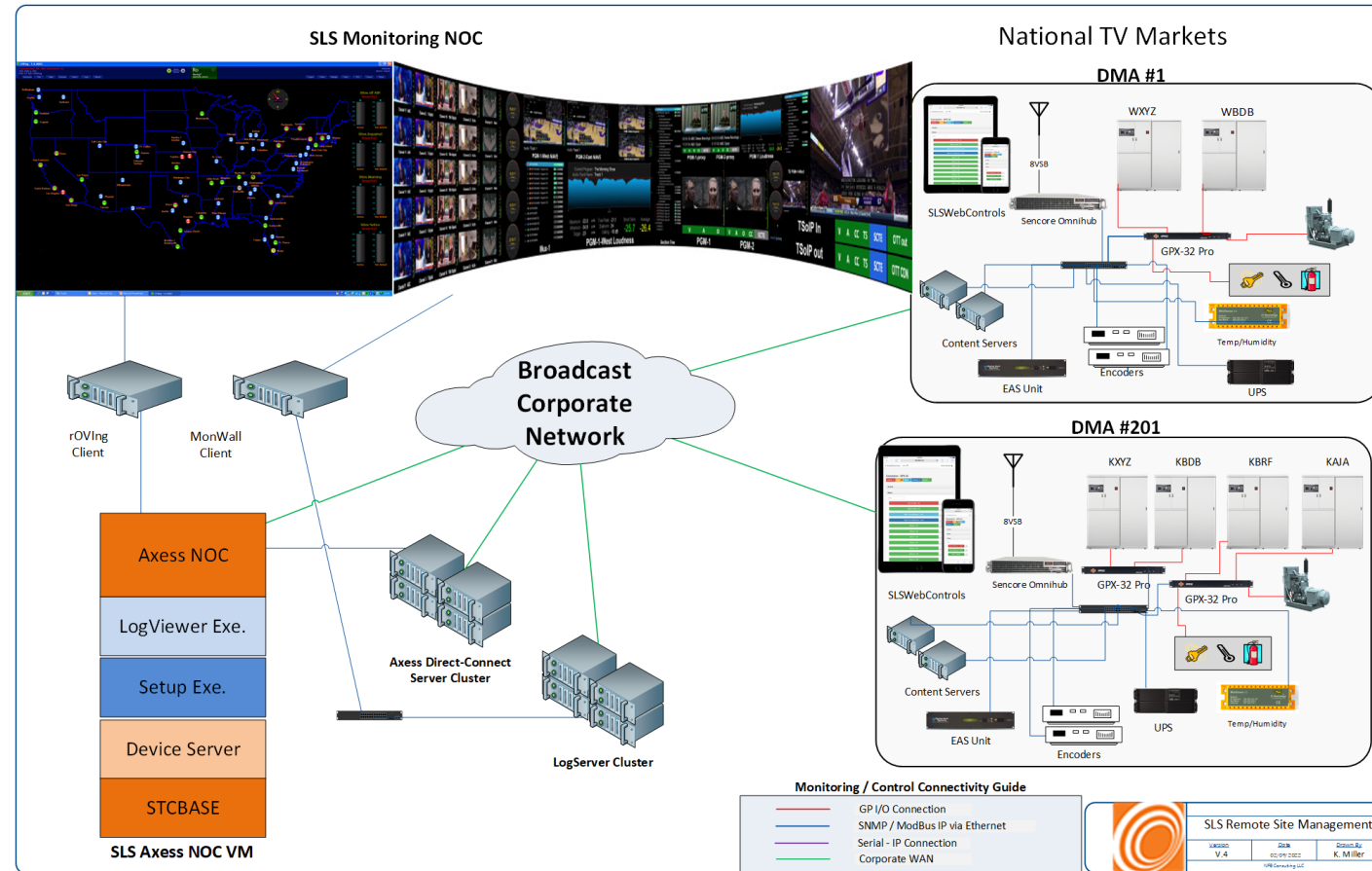
Suitelife Systems - Remote Market Monitoring

Comprehensive Management

- Fault management of all disparate technologies
- 100's of sites / thousands of devices
- Complete site visuals, customized with audible alarms

Remote Market Compliance

- Loudness, CC, Frozen picture & black
- Traffic & As-run comparisons
- DPI & Ratings Reports
- TS performance parameters
- Full bandwidth returns or hi-res proxies



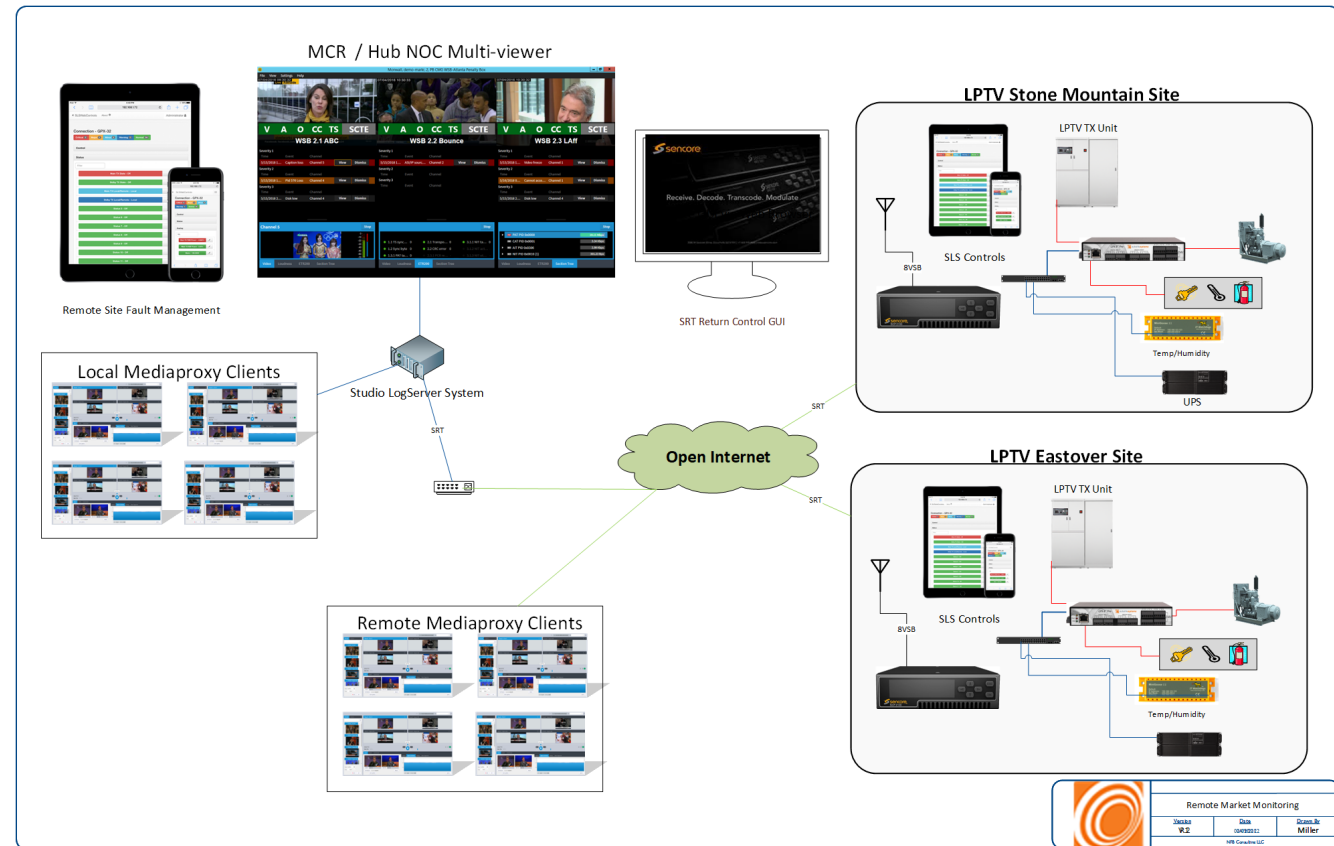
Suitelife Systems - Integrated Monitoring & Management Systems

Integrated Remote Market Management

- Remote market OTA monitoring returns via Open Internet
- Remote fault management of TX site
- Remote management of return appliance
- Remote market compliance

Integrated Fault Management & Monitoring

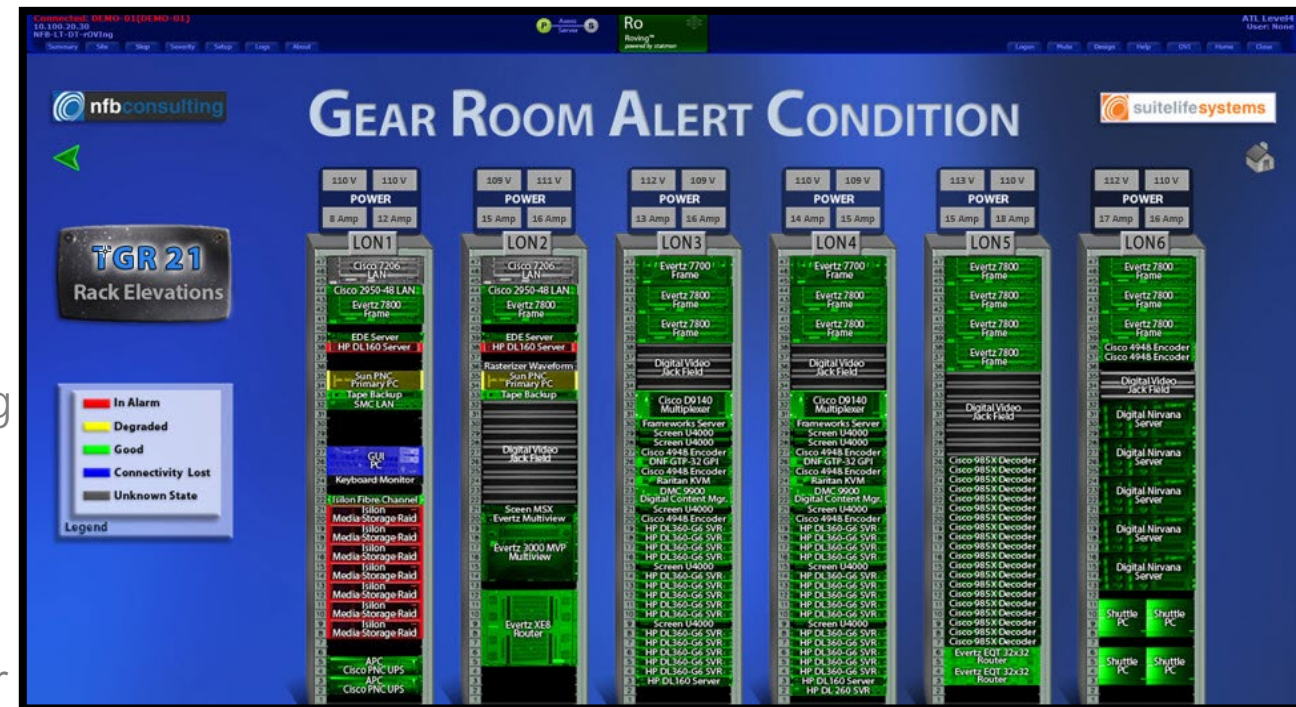
- Remote site fault event logs integrated into LogPlayer for reviewing how fault event affected aired program
- Time/date search of fault event
- Programmable fault event reporting



Suitelife Systems - Manage

Studio Management

- Utilize visual displays with audible alarms - surface datapoints critical to operations
- Increase the effectiveness to fault events directing the appropriate resource to the root cause
 - Eliminate running to reactionary alarms caused by a single fault
 - Programmable data channel grouping including device location, room & rack number
 - Programmable alarms & notifications
 - Root cause analysis
- Integrate with 3rd party trouble ticketing systems for tracking response and device performance data
- Integrate with 3rd party scheduling software



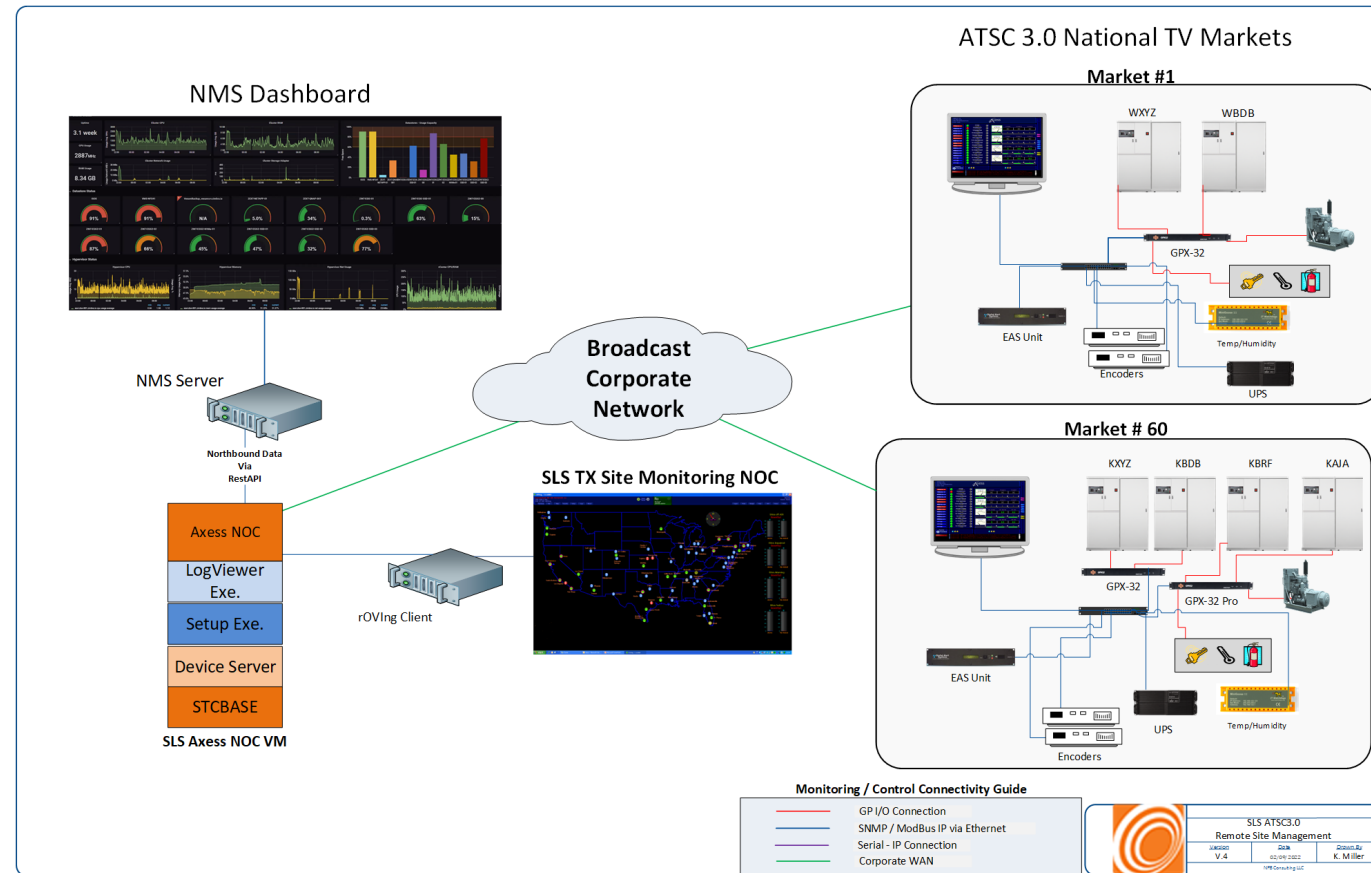
Suitelife Systems - Integrated Monitoring & Management Systems

Integrated Management Systems

- Multi-site remote data aggregation into a MMC fault management NOC
- MMC feeds data northbound into corporate engineering dashboard for bigger picture view of operations.
- Manager of managers

Northbound Data Management Use Cases

- ATSC 3.0 multi-site or remote market corporate NOC
- Network broadcast or call letter studio management
- Critical business data info & trending



Suitelife Systems **Moving Forward**

Next Steps

- Suitelife Systems is prepared to work with your engineering team developing a solution to meet your functional requirements
 - Understand key functional objectives
 - Outline budgetary costs based on a project plan
 - Develop a scalable deployment based your priorities
- Eager to assist your “third arm” development.



Thank you!

Manage. Monitor. Control.

Control your world, your way, all within the industry's smallest footprints.

Simply. Securely. Instantly.