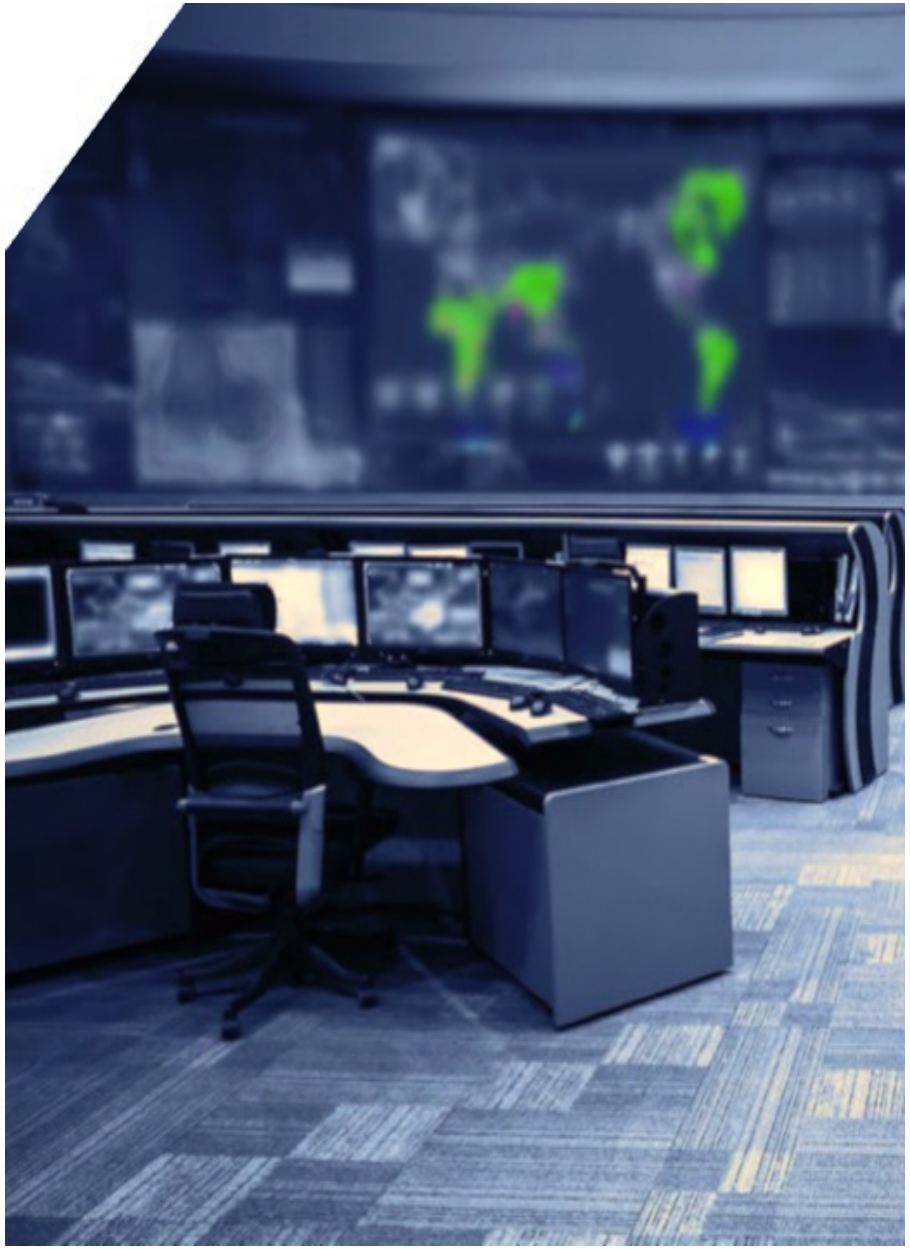
SENTINEL

By NuRAN Wireless

NuRAN's Network Management Programme

Providing 24/7 Network Monitoring And Management For Businesses Of All Sizes.



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OUR NOC TEAM'S EXPERTISE

In addition to its advanced technology, SENTINEL is backed by a team of experienced network engineers whose mandate is to ensure high level of service and support.

NOC MANAGER

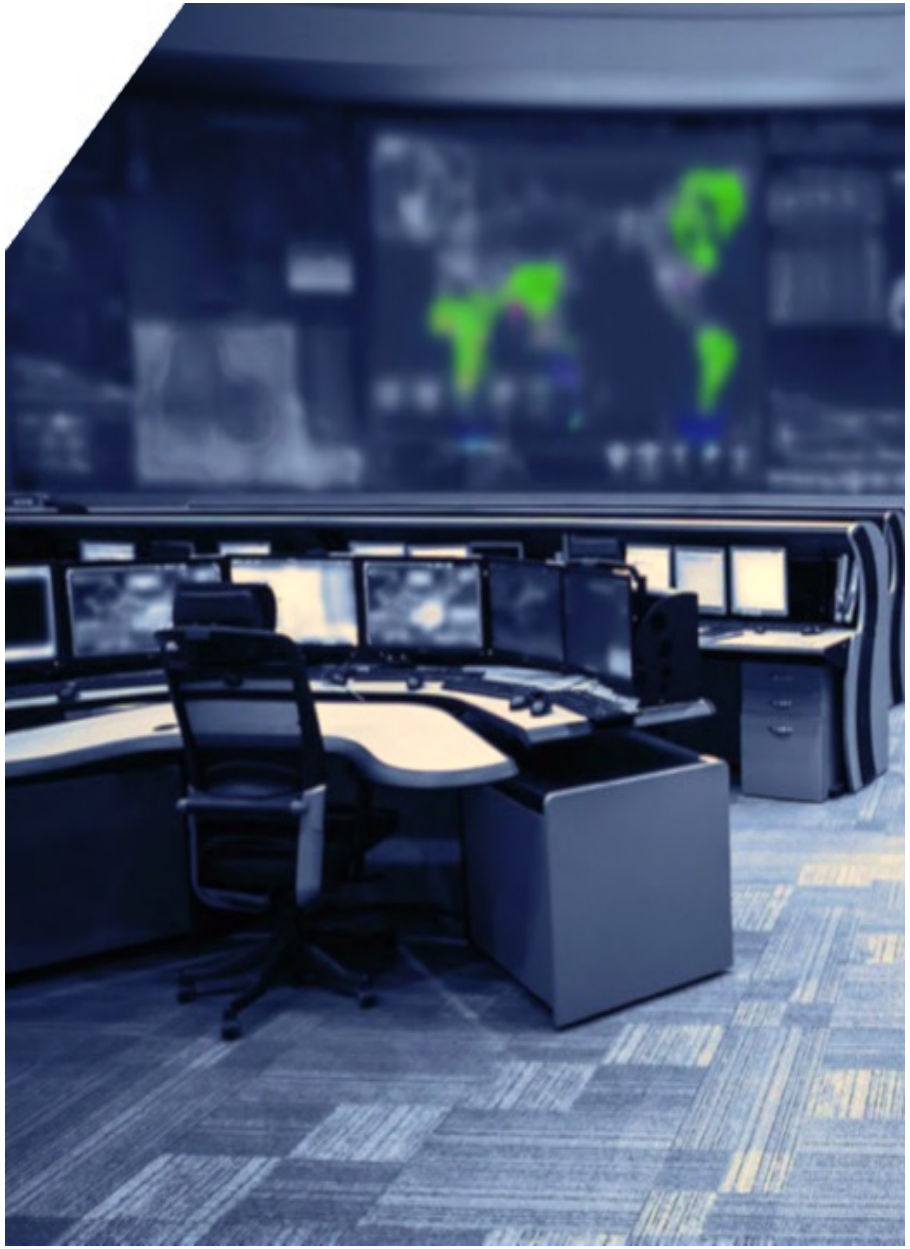
Oversees and orchestrates the entire NOC operation. Responsible for setting the team's goals, managing resources, coordinating activities, and ensuring efficient network supervision. The manager interfaces with other teams, stakeholders, and higher-level management.

SYSTEMS ADMINISTRATOR

Systems Administrator - Responsible for managing NOC infrastructure, operating systems and applications. Handles tasks like server provisioning, software installation, patches and upgrades, and overall system monitoring. Collaborates with network analysts/engineers to ensure smooth integration between the network and server components.

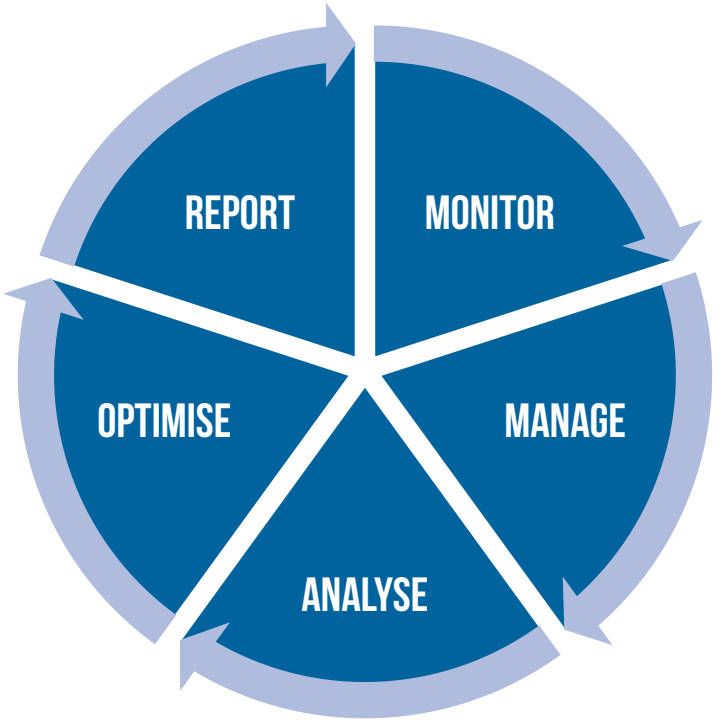
NETWORK ANALYST/ENGINEERS

Network Engineers - Technical experts with in-depth knowledge of network architecture, protocols, and technologies. Handle the configuration, troubleshooting, and optimisation of the telecom network. Skilled in network monitoring tools, protocol analysers and security measures.



SENTINEL OVERVIEW

SENTINEL is a comprehensive network monitoring and management solution designed to keep networks running 24/7. It provides real-time visibility into the performance of networks, applications, and services, allowing businesses to promptly identify and address issues that arise.



NETWORK MONITORING

24/7 MONITORING

Around-the-clock monitoring of your network to ensure maximum uptime and performance.

REAL-TIME ALERTS

Receive real-time alerts when issues arise for prompt action.

SENTINEL PROVIDES COMPREHENSIVE 24/7 NETWORK MONITORING AND MANAGEMENT FOR EVERY BUSINESS, ENSURING MAXIMUM UPTIME AND REAL-TIME ALERTS.

INCIDENT MANAGEMENT

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REGISTER

Trouble tickets are created and incident details are gathered.

INCIDENT TRIAGE

Each incident is diagnosed and classified for timely response and resolution.

TRACK

Status of incidents are continually monitored to ensure service level agreements are met.

SENTINEL PROVIDES 24/7 NETWORK MONITORING AND MANAGEMENT TO ENSURE THAT INCIDENTS ARE IDENTIFIED, RESPONDED TO, AND RESOLVED QUICKLY AND EFFECTIVELY.

TROUBLESHOOTING AND SUPPORT

TROUBLESHOOT

Root cause analysis and extensive testing are performed to accurately identify the source of the issue.

RESOLVE*

Implement fixes quickly and efficiently through an experienced support team

MONITOR

Monitor applied fix to confirm network operation and performance have been restored.

**Offered with management program package ($)*

SENTINEL PROVIDES COMPREHENSIVE TROUBLESHOOTING AND SUPPORT SERVICES TO ENSURE YOUR NETWORK RUNS SMOOTHLY AND EFFICIENTLY.

PERFORMANCE OPTIMISATION

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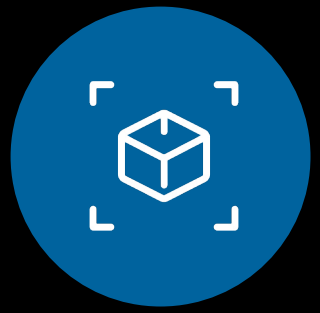
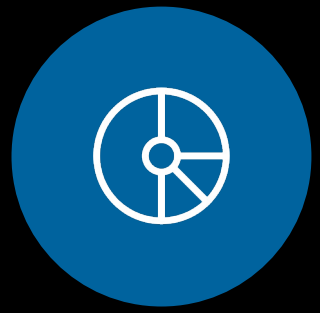
AUDIT

Review site configuration for setting discrepancies and incorrect parameter values.



BENCHMARK

Baseline site performance to identify areas of improvement and evaluate impact of changes.



OPTIMISE

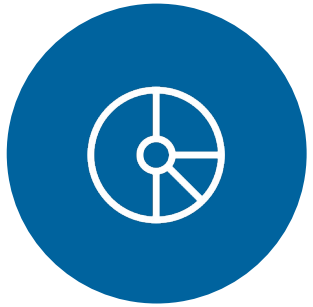
Propose configuration changes to improve network performance.

SENTINEL IS AN INVALUABLE TOOL FOR BUSINESSES LOOKING TO OPTIMIZE THEIR PERFORMANCE THROUGH REAL-TIME MONITORING AND DATA ANALYSIS.

AUTOMATED REPORTING

DATA COLLECTION

Collect, process and correlate data from multiple sources for increased network visibility and understanding.



DATA ANALYSIS

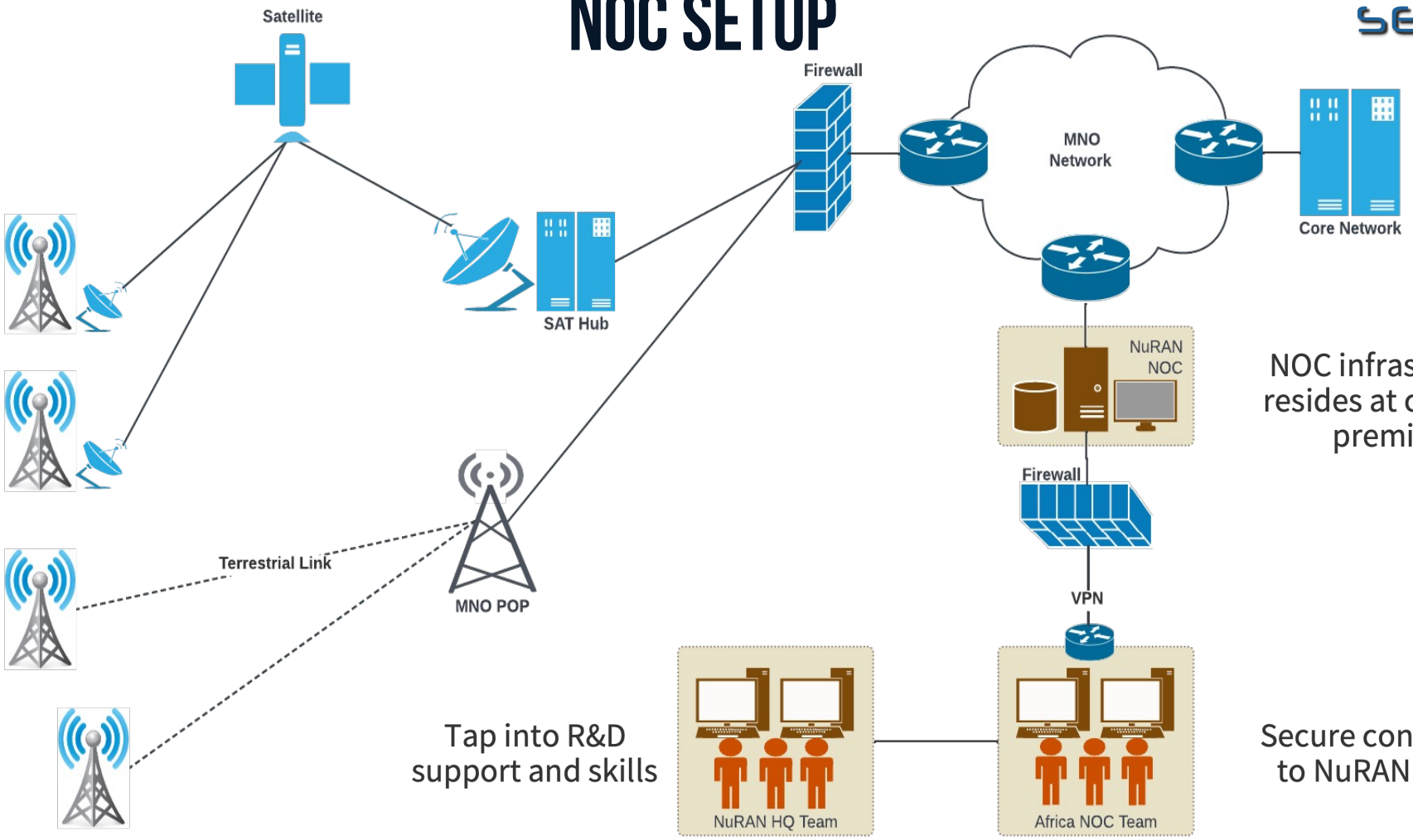
Turn raw data into actionable information to allow informed decisions to be taken.

REPORTING

Document changes and activities for future reference and comply with customer requirements

SENTINEL PROVIDES COMPREHENSIVE NETWORK MONITORING AND MANAGEMENT WITH POWERFUL REPORTING AND DOCUMENTATION CAPABILITIES TO ENSURE BUSINESSES CAN MAKE TIMELY AND INFORMED DECISIONS.

NOC SETUP



NOC infrastructure resides at customer premises.

Tap into R&D support and skills

Secure connection to NuRAN teams

TYPICAL NOC IMPLEMENTATION: PLATFORM + TECHNICAL TEAM

SENTINEL

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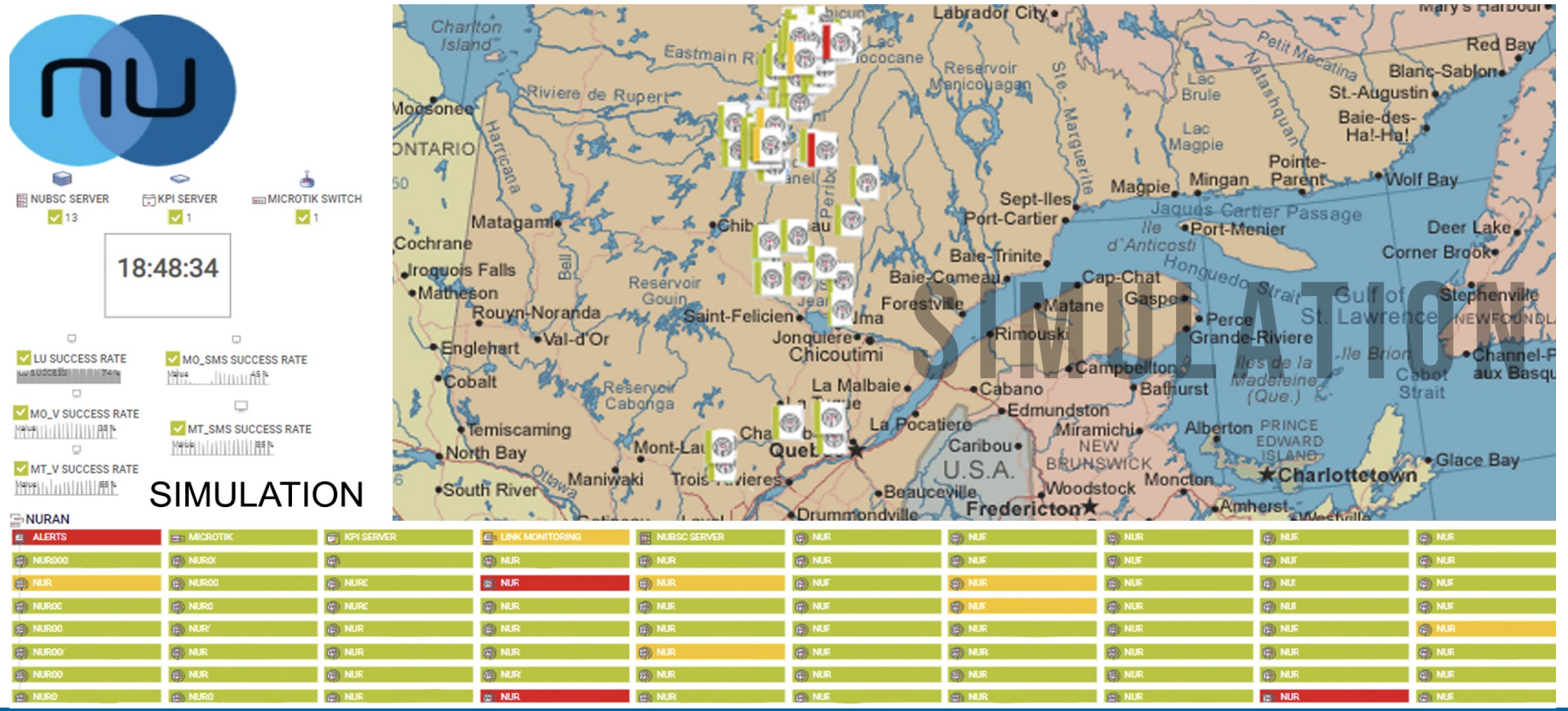
Network Management Use Cases

Benefits of Implementing SENTINEL

NETWORK DASHBOARD

- Real-time visibility of key performance indicators and threshold crossings.
- Automatic alerts are issued to technical teams for prompt action and resolution.
- Intuitive web interface eases troubleshooting, drill downs and root cause analysis.
- Built-in intelligent alarming and monitoring processes guides the team to issues.

ALL RAN ELEMENTS AND IT EQUIPMENT INFRASTRUCTURE ARE MONITORED

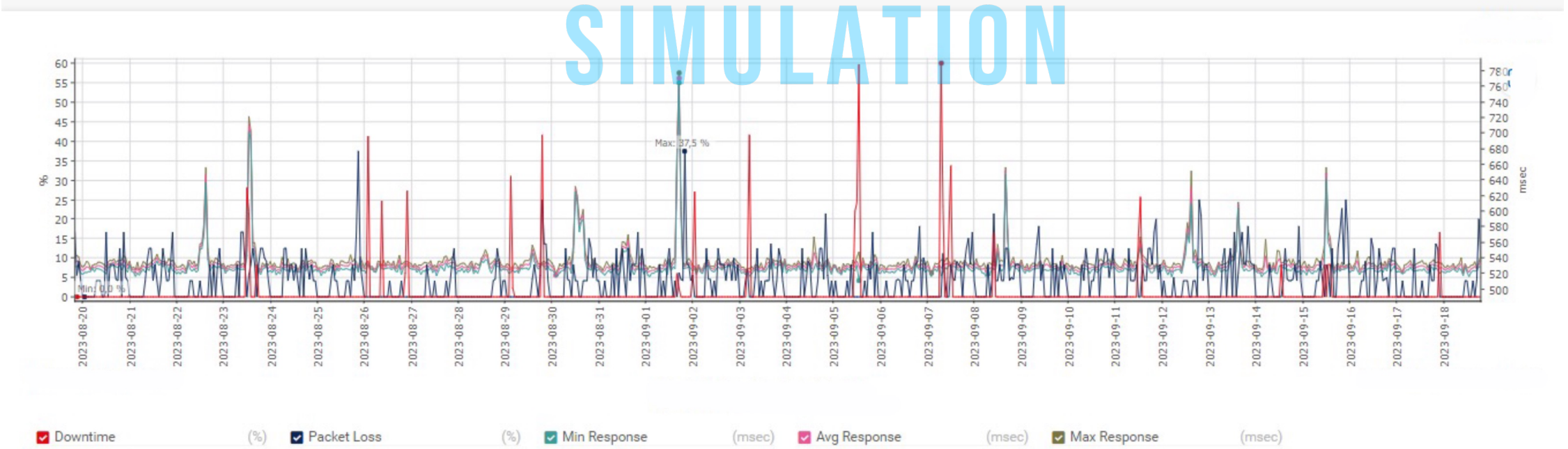


TIMELY VISIBILITY AND ACCESS TO REAL-TIME ALERTS IS CRITICAL

SERVICE UPTIME

- The main challenge of rural deployments is keeping site availability high. Impacts site profitability.
- Power and backhaul must be closely monitored and where possible, issues pre-empted.
- SENTINEL implements multiple alarms and continuous tracking processes to maximise service uptime.

Last Scan:	Last Up:	Last Down:	Uptime:	Downtime:	Coverage:
159 s	159 s	21 h 52 m	99,0872%	0,9128%	100%
Sensor Type:	**Performance Impact:**	**Dependency:**	**Interval:**	**Autonomous:**	
SSH Remote Ping		Parent	5 m	No	



KEEP A CLOSE EYE ON SITE AVAILABILITY

TRAFFIC TRACKING

- Rural sites are financially constrained, so traffic fluctuations must be monitored.
- Soft alarms are configured to alert engineers of changing traffic patterns.
- Historical traffic data allow traffic profiling and capacity upgrades to be planned.
- Backhaul latency and instability are key metrics affecting traffic generation.

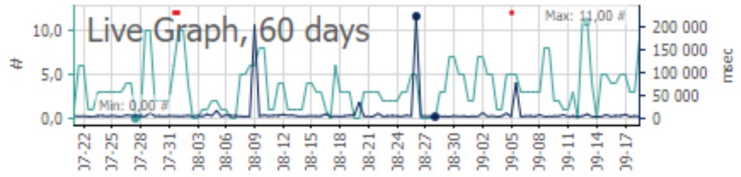
AVOID PROLONGED SLEEPING CELLS AND MISSING DOWNWARD TRAFFIC TRENDS

Erlang alert decrease 30%

NURAN NMS (Local Probe) » NURAN CLIENT » ALERTS

Last Message:
1 hour interval average of 5 960 msec (Execution Time) is unusually low for this hour of the week (9
BTS having 30% of traffic decrease(dailyErlang>15)-

Last Scan: 10 h 18 m
Last Up: 10 h 18 m
Last Down: 13 d
Uptime: 99,8897%
Downtime: 0,1103%
Coverage: 100%
Sensor Type: SSH Script sensor
Performance Impact:
Dependency: Parent
Interval: 12 hours

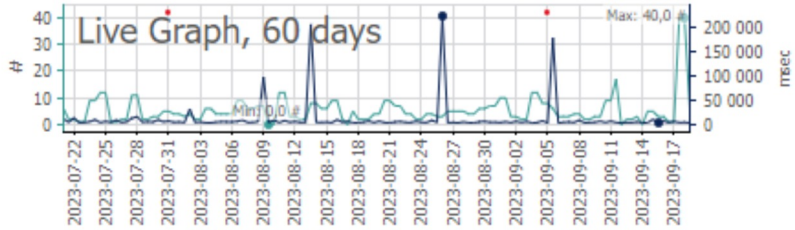


Erlang alert INCREASE OF 30%

NURAN NMS (Local Probe) » NURAN CLIENT » ALERTS

Last Message:
6 BTS having 30% of traffic INCREASE(dailyErlang>15)-

Last Scan: 9 h 29 m
Last Up: 9 h 29 m
Last Down: 13 d
Uptime: 99,8818%
Downtime: 0,1182%
Coverage: 100%
Sensor Type: SSH Script sensor
Performance Impact:
Dependency: Parent
Interval: 12 hours



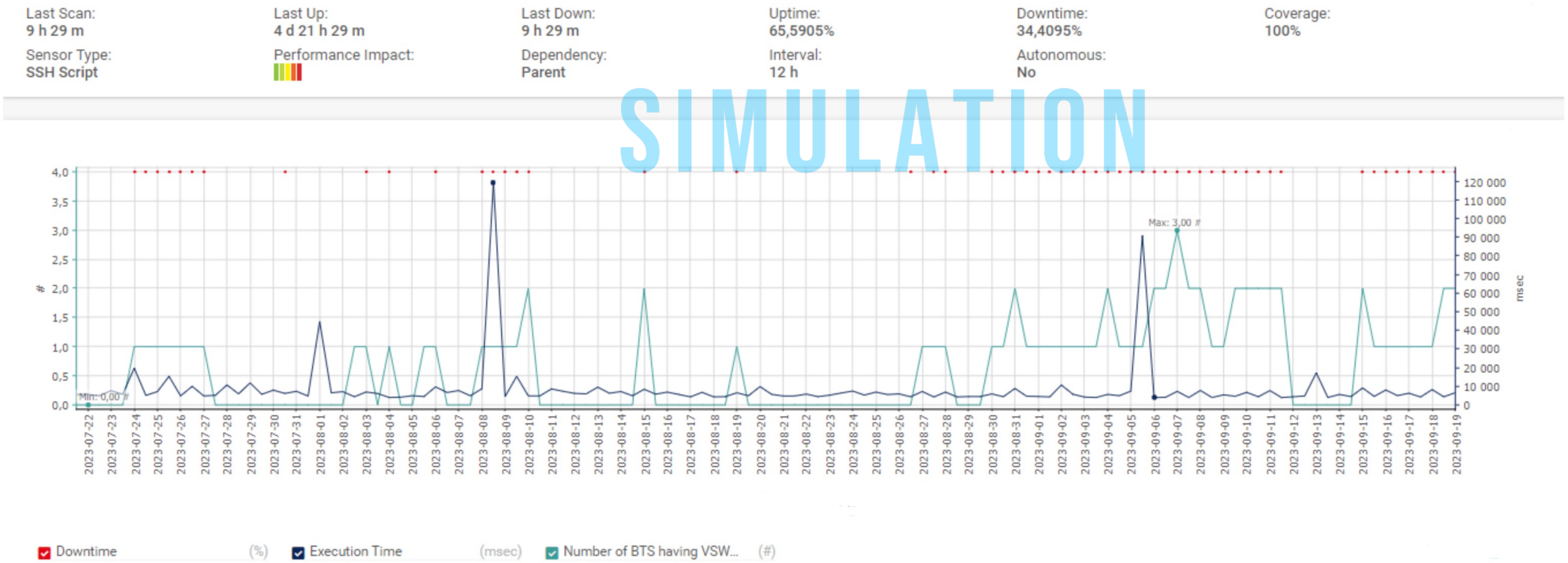
SIMULATION

STRIVE TO MAXIMISE SERVED TRAFFIC AND REVENUE GENERATION

HARDWARE ALARMING

- Rural sites are deployed in harsh environmental conditions, so hardware issues are inevitable.
- Site visits are costly occurrences, so dispatching field teams must be kept to a minimum.
- Changes to the physical site configuration is closely monitored and must be accurately diagnosed.
- Site ranking and issue impact are carefully weighed to decide on the need to dispatch a field team.

VSWR IS CLOSELY MONITORED TO PREVENT COVERAGE REDUCTION AND DAMAGE SITE EQUIPMENT



PLAN SITE VISITS WITH THE RIGHT INFORMATION AT HAND

SIGNALLING OPTIMISATION

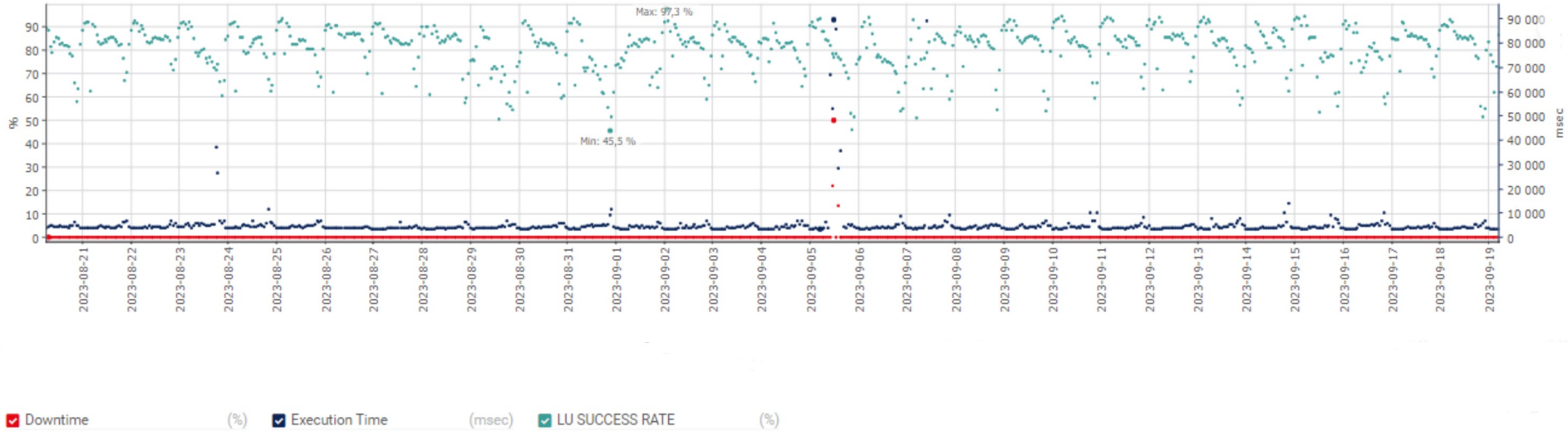
- Latency on the backhaul affects the signalling capacity of a site.
- Sites suffering signalling congestion have reduced traffic capacity.
- Location Updates play heavily on the signalling load, so monitoring is needed.
- Optimising logical parameters and dimensioning channels reduces congestion.

Date Time	Execution Time	LU SUCCESS RATE	Downtime	Coverage
Averages	4 861 msec	81 %	<1 %	100 %

Date Time	Execution Time	LU SUCCESS RATE	Downtime	Coverage
2023-09-19 04:00:00 – 05:00:00	3 559 msec	87 %	0 %	100 %
2023-09-19 03:00:00 – 04:00:00	3 552 msec	73 %	0 %	100 %
2023-09-19 02:00:00 – 03:00:00	3 541 msec	62 %	0 %	100 %
		75 %	0 %	100 %
		78 %	0 %	100 %
		83 %	0 %	100 %
		80 %	0 %	100 %
		55 %	0 %	100 %

Last Scan:	Last Up:	Last Down:	Uptime:	Downtime:	Coverage:
5 m 46 s	5 m 46 s	13 d	25,7697%	74,2303%	100%
Sensor Type:	**Performance Impact:**	**Dependency:**	**Interval:**	**Autonomous:**	**ID:**
SSH Script		Parent	24 h	No	

SIMULATION



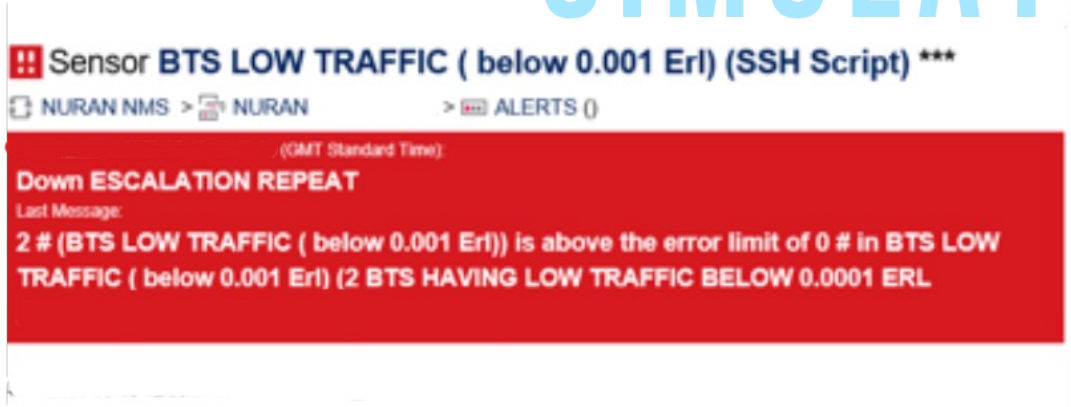
LOCATION UPDATES ARE A BIG SOURCE OF SIGNALLING, SO CRITICAL TO CLOSELY TRACK THIS KPI.

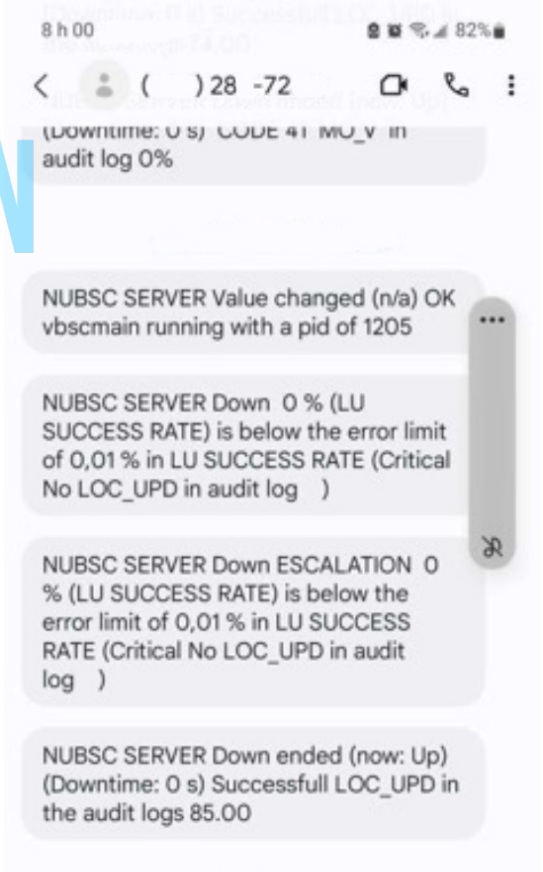
BALANCING SIGNALLING AND TRAFFIC CAPACITY

SMS & EMAIL ALERTS

- Real-Time Notifications provides real-time SMS and email alerts, ensuring that network administrators are promptly informed of any critical events or issues.
- Customizable Alerts to customize alert thresholds and parameters to align with their specific monitoring needs.
- Multi-Layered Alerts allowing users to prioritize and categorize alerts based on severity levels.
- Actionable Insights enabling quick decision-making and proactive network management.

SIMULATION





GET IN TOUCH

For all sales-related inquiries, please do not hesitate to contact us at sales@nuranwireless.com.

We are here to assist you and provide the information you need to explore our products and services. Your interest is important to us, and our sales team will be delighted to assist you promptly.

Thank you for considering NuRAN Wireless for your business needs.

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