

Telecom Infrastructure Operations Reduce Fault Response Time by 30% with iPSU Remote Monitoring

Industry: Telecom & Network Infrastructure

Solution: IoT Network Management System | Remote Monitoring | Predictive Operations | Automation

iPSU — Turning Manual Site Monitoring into Real-Time Remote Operations

Telecom and infrastructure networks depend on thousands of distributed sites operating reliably around the clock. Traditionally, many critical site parameters—including power availability, DC faults, temperature, earthing and Ethernet connectivity—were checked manually or discovered only after an operational problem occurred.

RIPL addressed this challenge through **iPSU**, an IoT-enabled Network Management System designed to remotely monitor infrastructure health, identify abnormalities in real time and initiate proactive operational responses.

30%

Reduction in fault response time through proactive monitoring

24x7

Remote visibility of critical site infrastructure

Real-Time

Fault alerts and operational escalation

Reduced

Dependence on routine manual site inspections

The Challenge

Infrastructure operations teams were heavily dependent on field resources to inspect telecom and network sites for critical operational parameters.

Engineers often had to physically visit sites to verify:

- Power availability
- DC power status

- Equipment temperature
- Earthing condition
- Ethernet connectivity
- Site equipment health

This manual operating model created several challenges.

Faults could remain unnoticed until customers or operations teams reported a service issue. Engineers were sometimes dispatched simply to diagnose a condition that could have been identified remotely. Operations teams also lacked centralized visibility across geographically distributed sites.

As the network expanded, the organization needed a more scalable approach that could:

- Detect faults immediately
- Reduce unnecessary site visits
- Improve infrastructure visibility
- Shorten fault-response time
- Automate escalation
- Improve SLA monitoring
- Reduce manpower dependency for routine checks

The objective was to move infrastructure monitoring from a **reactive, manpower-intensive operating model to a proactive digital model**.

What Did RIPL Do?

RIPL developed and deployed **iPSU — an IoT Network Management System** that connects field infrastructure with a centralized cloud-based monitoring platform.

IoT-enabled devices installed at sites continuously capture operational parameters and transmit them to the central platform.

The solution provides real-time monitoring of:

- DC faults and voltage conditions
- Power availability
- Temperature
- Earthing
- Ethernet connectivity
- Device health
- Communication status
- Site-level alarms

Instead of depending on physical inspection, operations teams can remotely see the current health of infrastructure across multiple locations from a centralized dashboard.

Real-Time Infrastructure Monitoring

iPSU provides a unified operations dashboard displaying the live status of connected sites and equipment.

Sites can be classified as:

Normal → Warning → Critical → Offline

Operations teams can immediately identify abnormal sites and drill down into specific equipment or fault conditions.

This enables NOC and operations teams to focus their attention on sites requiring intervention rather than manually monitoring every location.

Automated Fault Detection

The platform continuously evaluates incoming IoT telemetry against configured operating thresholds.

For example:

Normal DC condition

→ System continues monitoring

DC voltage falls below threshold

→ Fault automatically detected

→ Alarm generated

→ Operations team notified

Similar rules can be configured for:

- Power failure
- High temperature
- Earthing fault
- Ethernet disconnection
- Device offline condition
- Repeated power interruptions
- Abnormal DC readings

This enables faults to be identified at the moment they occur rather than waiting for manual discovery.

Proactive Alert and Escalation Engine

One of the key capabilities of iPSU is its automated escalation workflow.

When a critical fault occurs, the platform can initiate predefined escalation actions.

For example:

Critical fault detected

- NOC engineer notified
- Fault acknowledgement tracked
- Supervisor alerted if acknowledgement is delayed
- Regional operations team notified if SLA threshold is approaching
- Field intervention initiated when required

This replaces multiple manual calls and follow-ups with a structured, measurable workflow.

Predictive Monitoring

Historical telemetry enables operations teams to identify recurring infrastructure behaviour before it becomes a major failure.

The system can highlight patterns such as:

- Increasing temperature
- Repeated power interruptions
- Voltage instability
- Frequent connectivity loss
- Repeated site alarms
- Equipment health deterioration

These insights help teams shift from **break-fix maintenance to preventive maintenance**.

Instead of asking:

"Which site has failed?"

Operations teams can increasingly ask:

"Which site is most likely to fail next?"

Client-Facing Performance Dashboards

iPSU also provides centralized reporting and performance visibility for clients.

Dashboards can present:

- Total monitored sites
- Online and offline sites
- Active critical alarms
- Site uptime
- Fault trends
- Average response time

- Average resolution time
- SLA compliance
- Regional performance
- Recurring fault categories

This gives both operations teams and clients a common, data-driven view of infrastructure performance.

The Results

The implementation of iPSU transformed site monitoring from a manually driven activity into a remotely managed, data-driven operation.

30% Reduction in Fault Response Time

Real-time fault identification and proactive alerts help operations teams respond significantly faster than traditional manual monitoring.

Reduced Manual Site Dependency

Routine infrastructure checks can now be performed remotely, allowing field engineers to be deployed primarily where physical intervention is actually required.

Faster Fault Visibility

Power failures, DC abnormalities, temperature events, earthing faults and connectivity issues become visible centrally as soon as they are detected.

Improved Resource Utilization

Engineering resources can focus on corrective and preventive work instead of travelling to sites simply to verify operational conditions.

Improved SLA Management

Alarm timestamps, acknowledgement times, escalation and resolution information provide measurable visibility into SLA performance.

Proactive Maintenance

Historical trends help identify recurring faults and potentially vulnerable sites before major failures occur.

From Manual Monitoring to Intelligent Operations

Before iPSU

Manual site inspection

- Fault discovered late
- Operations team informed
- Engineer dispatched
- Site visited
- Problem diagnosed
- Fault resolved
- Manual reporting

With iPSU

IoT monitoring

- Fault detected automatically
 - Real-time alarm generated
 - Automated escalation
 - Remote diagnosis
 - Engineer dispatched only when required
 - Fault resolution verified
 - Performance automatically recorded
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Business Impact

iPSU enables infrastructure operators to manage growing networks without increasing manpower at the same rate.

By connecting physical infrastructure to a centralized digital monitoring environment, organizations gain the ability to:

- Monitor more sites remotely
- Detect problems earlier
- Reduce avoidable field visits
- Respond faster to critical faults
- Improve operational transparency
- Strengthen SLA governance
- Use data for preventive maintenance

The result is a shift from **manpower-dependent monitoring** to **intelligent, always-on infrastructure operations**.

Monitor Remotely. Detect Proactively. Respond Faster.