LANTRONIX®

INDUSTRY: Nationwide Monitoring of Critical Infrastructure at Cellular Sites

Lantronix IoT Solutions Deliver Actionable Insights and Operational Efficiency for a Leading Mobile Network Operator

Case Study Overview

A major mobile network operator chose Lantronix over 20+ IoT competitors to monitor and manage critical infrastructure at Cell Sites nationwide. Lantronix's unique edge data acquisition and processing capabilities for assets such as generators, power systems, and fuel tanks enabled rapid deployment, resulting in cost savings, improved network reliability, and accurate regulatory compliance reporting across its national cellular tower infrastructure.

Challenge: Implement Remote Generator Deployment and Management

With tens of thousands of generators, over 100,000 local power systems, and thousands of fuel tanks deployed, the company required a scalable, flexible, and reliable IoT solution to monitor detailed asset data—including runtime, fuel levels, battery status, charger performance, GFCI, controller status, oil pressure, coolant, voltages, currents, and regulatory environmental reporting.
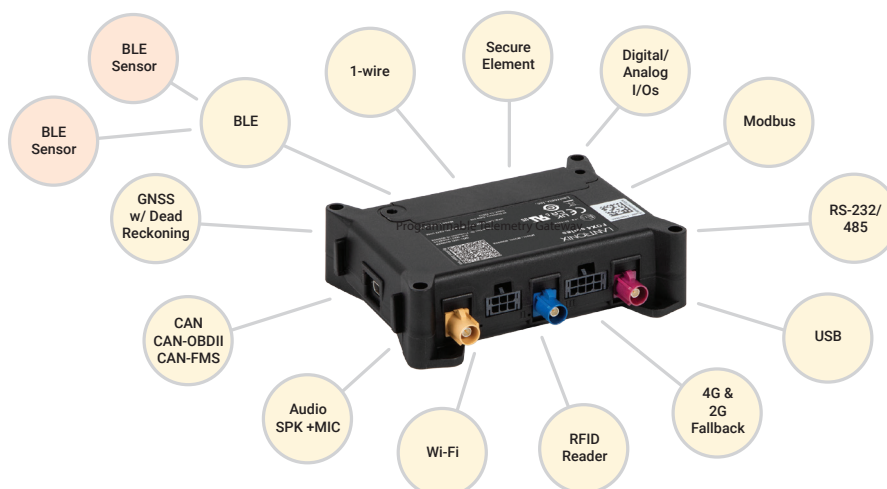
The solution needed to deliver:

- A single device capable of zero-touch provisioning, regardless of connectivity status
- Standardized edge data collection for deployment across diverse manufacturers and models
- Agility to adapt quickly as IoT data becomes integral to business processes
- Robust durability and security
- An edge intelligence programming interface
- Pre-loaded factory software configuration to streamline onboarding

FOX Series Telematics Gateways

The Lantronix FOX Series telematics gateways are intelligent, programmable devices designed for adaptable smart data acquisition and processing. Compact and all-in-one, these cellular units are compatible with nearly any equipment and vehicle. They support all major machine protocols and seamlessly integrate with cloud platforms to meet diverse user requirements.

For more information, visit: https://www.lantronix.com/products/fox-series/

> ❝ Lantronix's ability to understand the challenges the customer faced allowed us to collaborate on an edge technology solution that provided the next gen in secure critical infrastructure monitoring. ❞
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> – Mathi Gurusamy
>   Chief Strategy Officer
>   Lantronix Inc.

SOLUTION: FOX Series with Edge Compute and Percepxion Software

Utilizing Lantronix Percepxion™ IoT Edge Solution Platform, the Lantronix FOX Series Telematics Device and valued-added apps and services, the communications giant gained the following benefits:
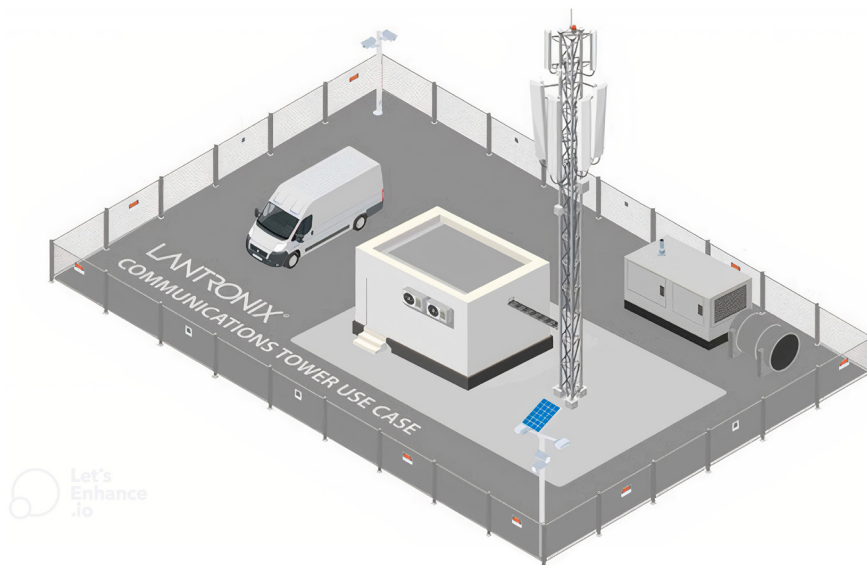
Edge Compute:

- Local data acquisition from different field assets using Modbus and CAN
- Edge data processing and data normalization to simplify integration and reduce connectivity costs
- Internal data storage that mitigates data loss due to connectivity issues

Hardware:

- Award-winning FOX Series with internal antennas that simplify installation & inventory handling
- Accessory harnesses that shorten installation times, saving costs
- Secure data transmission using TLS 1.3 and MQTTS

Cloud Services:

- Zero-touch provisioning
- Centralized device lifecycle management
- OTAs for firmware, scripts and configuration using dynamic query-based groups
- Enterprise integration using Percepxion API library

RESULTS: Provision, Monitor and Maintain Remote Generators

Utilizing Lantronix IoT solutions, this mobile network operator is able to remotely manage its large fleet of critical infrastructure assets. Results included:

- Time and money saving integration of 1000's of network devices with edge-to-cloud set up and data integration.
- 24/7 visibility to all remote locations, alerts for unplanned events, detection of security threats or tampering and user security audits.
- Ability to ensure that its IoT devices remain up-to-date and secure throughout the solution lifespan by leveraging a centralized device management solution, providing secure access to remote devices.

Learn more about Critical Infrastructure Monitoring and the Lantronix FOX Series. Visit https://www. lantronix.com/products/fox-series/.

Percepxion™ IoT Device Management

Lantronix Percepxion simplifies IoT device management by providing the required tools for zero-touch provisioning, device embedded and edge software orchestration and security certificate updates. Its comprehensive API library ensures that IoT devices can be easily integrated to other enterprise systems delivering tangible business value. Percepxion is pre-configured into Lantronix's IoT gateways, routers, trackers and switches, enabling the user to remotely manage thousands of IoT connectivity devices from a single dashboard.

For more information, visit https://www.lantronix.com/percepxion/

About Lantronix

Lantronix Inc. is a global leader of compute and connectivity IoT solutions that target high-growth markets. Lantronix's products and services empower companies to succeed in the growing IoT markets by delivering customizable solutions that enable AI Edge Intelligence. Lantronix's advanced solutions include Intelligent Substations infrastructure, Infotainment systems and Video Surveillance.

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