Sensing the next wave in mining

SENSORMINE
BY LAB³ LUMEN

Extracting value by mining with new technology

Facing the future: mining in the years ahead

SensorMine provides transparency on asset performance across event the largest sites:

- Reducing reliance on site team members for monitoring secondary assets
- Reduces operational costs by right-sizing maintenance activities

No electrical work for sensors, great range, built in reporting, alerting and simple deployment.

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Using sensors to maximise productivity

Viability mapping
Balancing the operational costs vs. returns for mining specific areas and refocusing production elsewhere.

Predictive maintenance
Using data to judge when equipment needs to be fixed or maintained to prevent it breaking unexpectedly and minimise downtime

Asset sweating
Using data to figure out whether an asset needs to be replaced or not to prevent both unexpected break-down and unnecessary expenditure.

Simple Deployment

Deploy Gateway

Glue Sensors

Log Location Using
SensorMine Mobile App

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Our Sensors

Sensor Types (Long Range 10km)

- ✓ Temperature
- ✓ Vibration
- ✓ Humidity
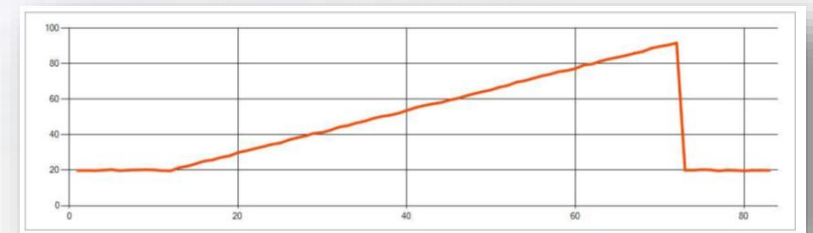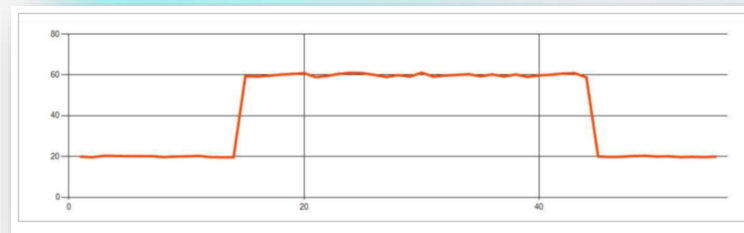- ✓ Bore Hole Water Level
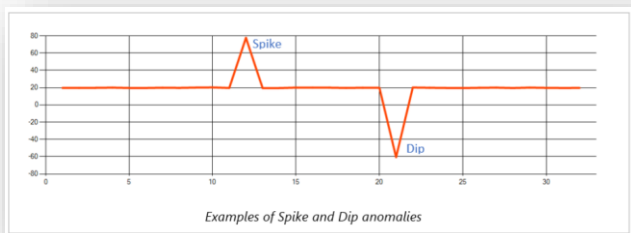
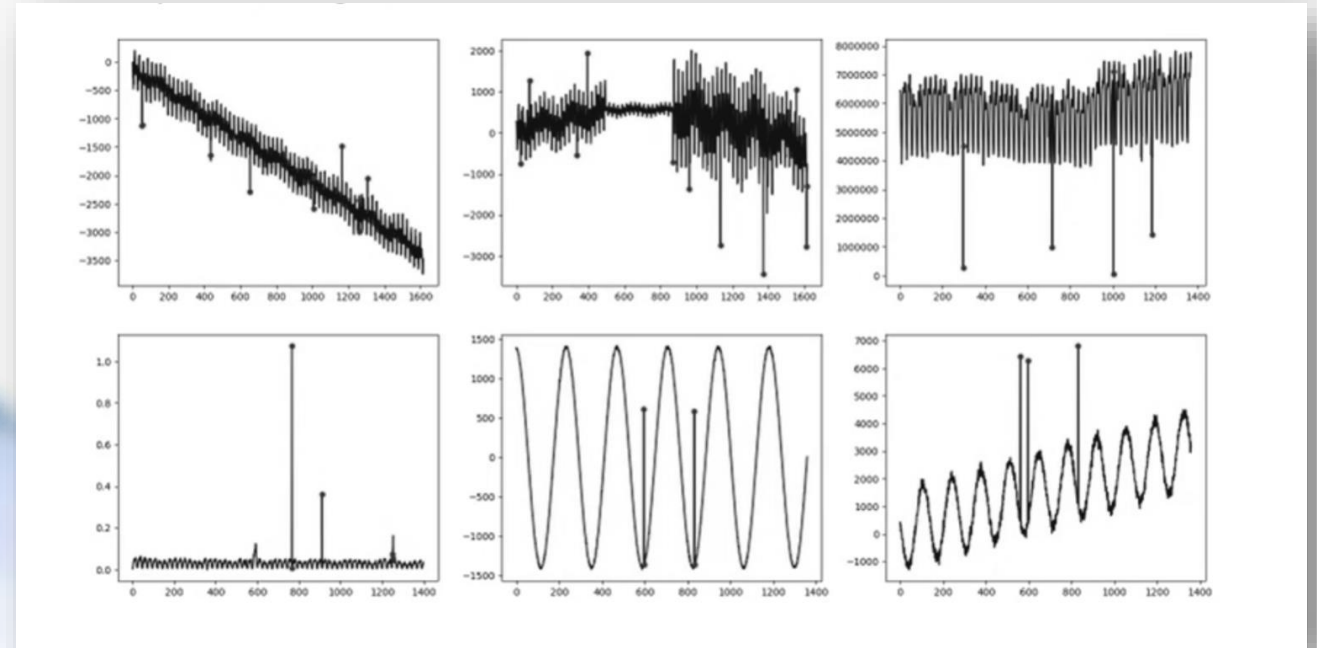## Sensor Types (Short Range 500m)

- ✓ Pulse Counter
- ✓ Light
- ✓ Pressure
- ✓ Vehicle
- ✓ Asset Detection (Asset onsite?)
- ✓ Flex
- ✓ Ultrasonic
- ✓ Liquid Level (Fuel)
- ✓ Compass Sensors

- ✓ Motion Detection
- ✓ Door Open Close
- ✓ CO
- ✓ Water Detection
- ✓ Water Rope
- ✓ Voltage (low to High)
- ✓ Resistance

Remotely programmable sampling rate

Up to 3 Year Battery Life

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AI Driven Alerting

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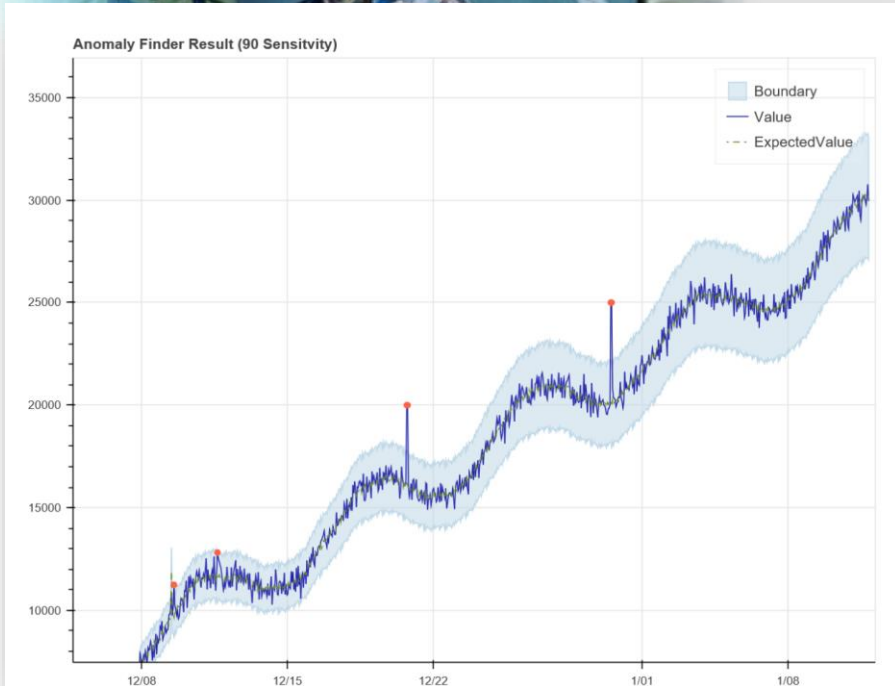
Extract the most valuable resource in mining: **your data**

Transforming with SensorMine

SensorMine by Lab3 Lumen is your gateway to a goldmine of real-time data, providing an easy-to-implement, low-cost, end-to-end predictive maintenance solution to monitor equipment and access insights 24/7 – helping you to make precise, data-backed decisions to keep your mine running productively.

Low-cost sensors on critical assets
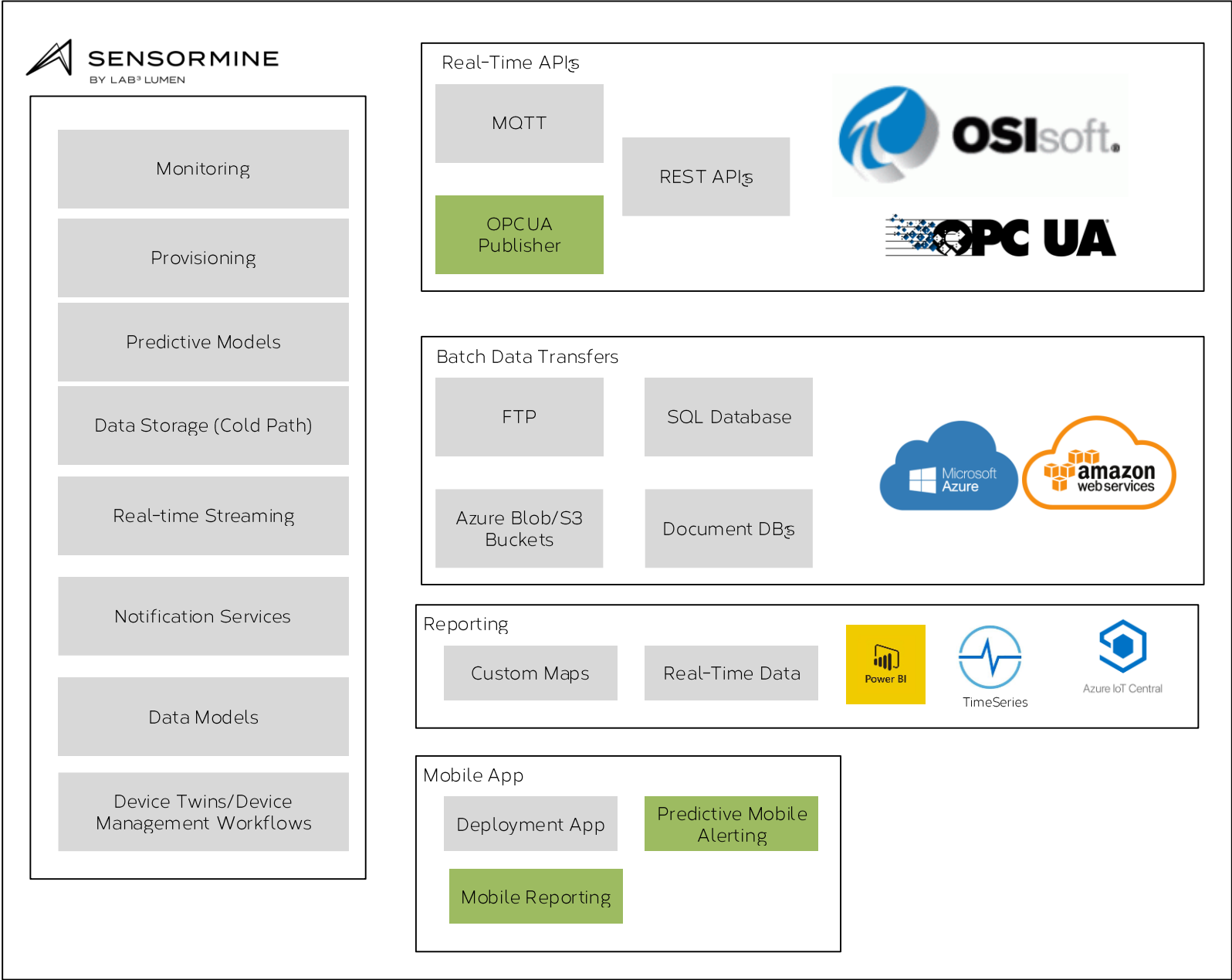
+

Vibration, temperature, and location real-time data

+

Advanced cloud platform

+

Data science, AI, & advanced analytics
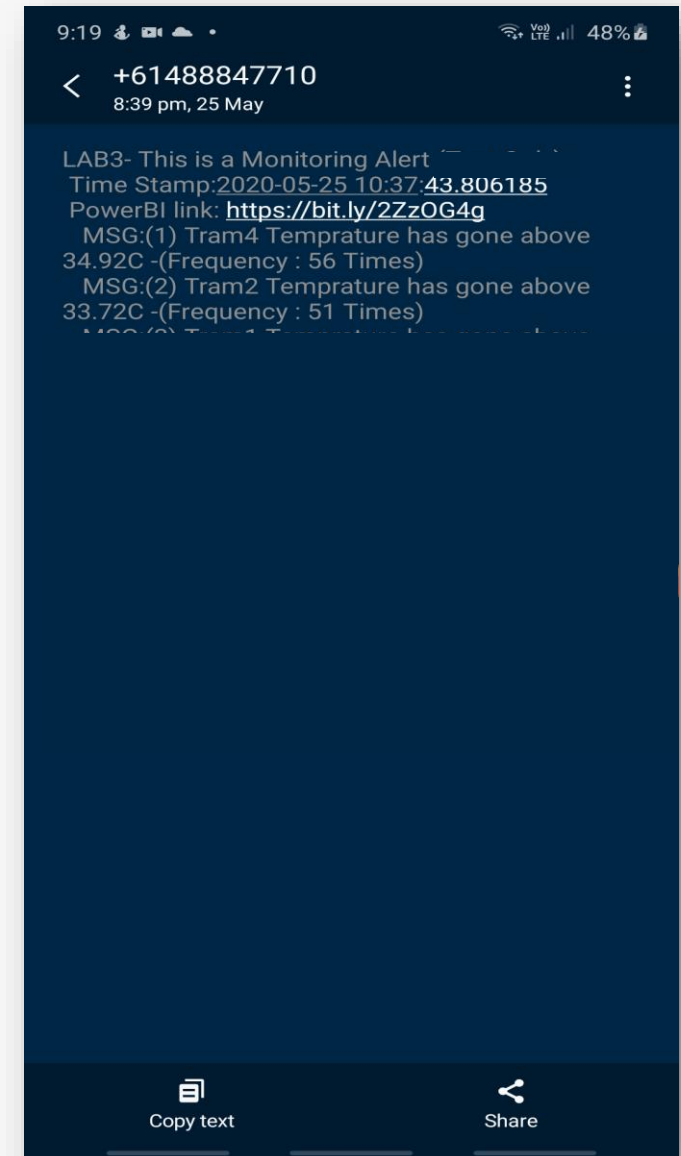
Actionable visual dashboards to save costs and avoid downtime

Architecture and Interfaces

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- Monitoring
- Provisioning
- Predictive Models
- Data Storage (Cold Path)
- Real-time Streaming
- Notification Services
- Data Models
- Device Twins/Device Management Workflows

Real-Time APIs

- MQTT
- REST APIs
- OPCUA Publisher

OSIsoft.
OPC UA

Batch Data Transfers

- FTP
- SQL Database
- Azure Blob/S3 Buckets
- Document DBs

Microsoft Azure
amazon web services

Reporting

- Custom Maps
- Real-Time Data

Power BI
TimeSeries
Azure IoT Central

Mobile App

- Deployment App
- Predictive Mobile Alerting
- Mobile Reporting
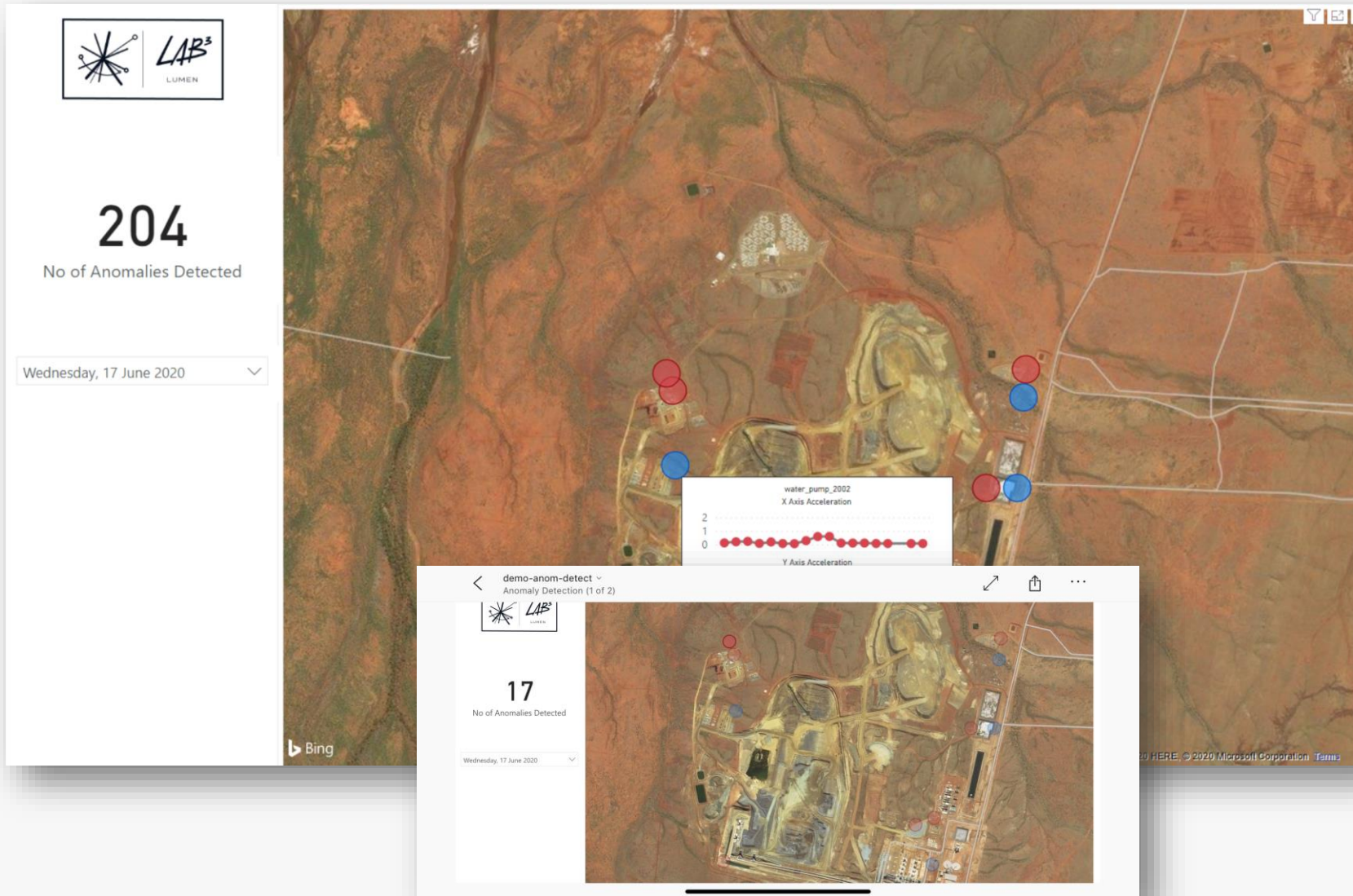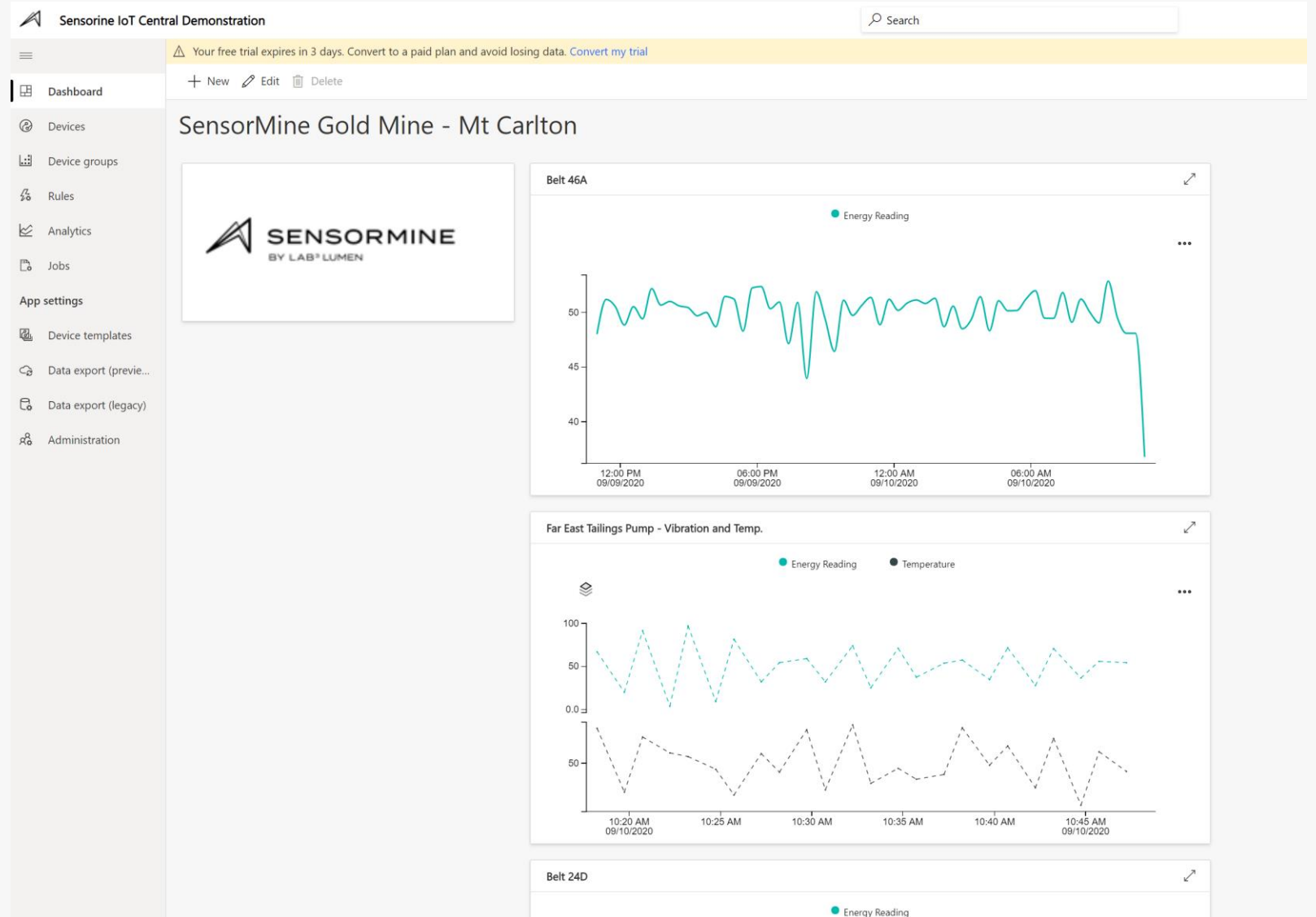
Real-Time Visuals and Alerting

End User Tools
IoT Central

Microsoft SaaS Platform:
- Customisable Rules
- Custom Dashboards
- "Light" Device Management
- Configurable Alerting

Used for small deployments, simple interface for IoT management.

Web portal only.

End User Tools
PowerBI

Included in all deployment, provides map based sensor monitoring and alerting. Mostly an end user tool.

Available as a desktop app, mobile and web portal.

Can be customised following initial deployment.

End User Tools
Azure Time Series
Insight

Solution used for deep analysis of data. Has great visualisation tools and fully customisable user interface.

Visual can be embedded into other applications mobile friendly.

Starts At

$80/Month/Sensor

Includes: Gateway, Cloud Integration,
API/Data Exports, Alerting and
Reporting

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FIX PLANT MONITORING

Deployed SensorMine to monitor various fix assets. Assets included multiple pumps, bearings and motors.

LAB³

ROAD QUALITY
MONITORING
EVOLUTION MINING

Solution uses very long range battery powered sensors to identify rough spots in the haul roads at mine sites by analysing vibration of trucks.
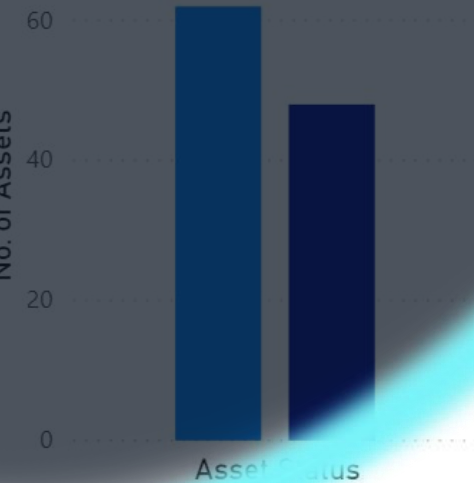
ASSET LOCATION MANAGEMENT

Asset Status
- [ ] Not Utilised
- [ ] Operational

Days Since Last Moved

| 0 | 90 |

Solution uses very long range battery powered sensors to track mobile assets such as lighting towers, compressors and pumps.

● Not Utilised ● Operational

No. of Assets — 60, 40, 20, 0

Asset Status

Days Since Last Moved 44
First Asset Status Not Utilised

Days Since Last Moved
- 0
- 19
- 37
- 54
- 74
- 95

mapbox
© Mapbox © OpenStreetMap **Improve this map** © Max

# The future is fearless with disruptor tech from LAB3 Lumen

Through our innovation hub LAB3 Lumen, we have partnered with leaders in the mining industry to create a solution that will help you to grow and adapt fearlessly.

If you want to know more about LAB³ Lumen or the waves we're making in the mining industry, drop a line to:

Alain Blanchette
Director - LAB³ Lumen

alain.blanchette@lab3.com.au
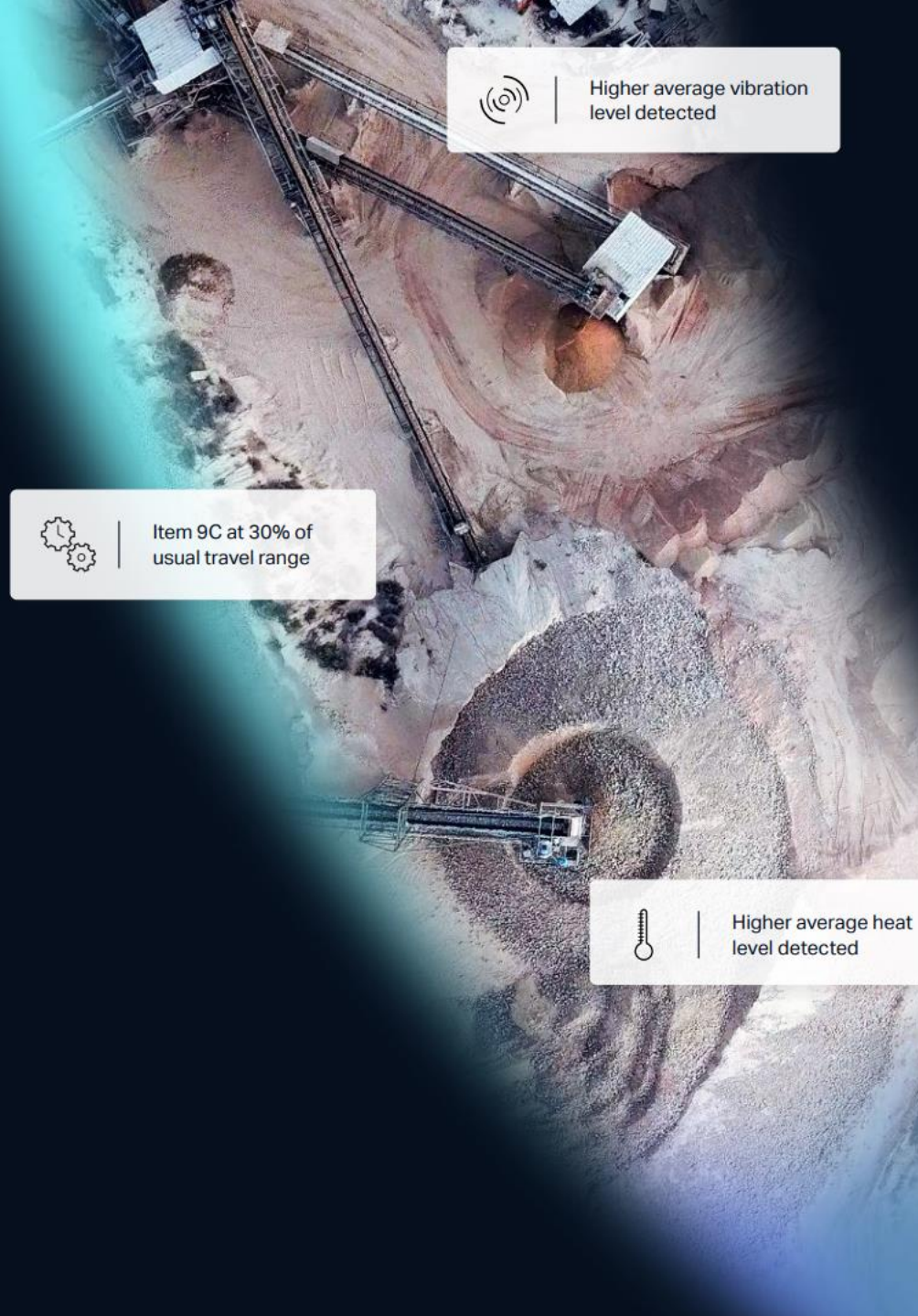
Higher average vibration level detected

Item 9C at 30% of usual travel range

Higher average heat level detected