



ARNOWA for Smart Mining

Safer Mines. Smarter Operations.
Sustainable Outcomes.

Unlock Mining 4.0 with Arnowa's AIoT Ecosystem

Mining operations face mounting pressure to enhance safety, reduce environmental impact, and maximise productivity. Arnowa's AIoT and Mining 4.0 platform delivers real-time monitoring, predictive analytics, and smart automation—optimising operations from pit to port.

Core Capabilities

Real-Time Equipment & Operational Monitoring



- Track fleet, drills, conveyors, crushers, and other critical machinery.
- Monitor energy consumption, utilisation, and equipment health.
- Condition-based alerts to prevent downtime and optimise performance.

Environmental & Worker Safety



- Monitor air quality, dust, gas levels, and noise.
- Detect unsafe zones, fatigue, or proximity hazards for workers.
- Ensure compliance with environmental and occupational safety regulations.

Structural & Slope Integrity



- Real-time monitoring of pits, slopes, tailings, and storage facilities.
- Early warning for landslides, subsidence, or structural risks.
- Supports proactive safety measures and regulatory compliance.

AI & Mining 4.0 Intelligence



- Gen AI, Agentic AI, and predictive analytics for smarter decisions.
- Boosts resource use, energy efficiency, and productivity.
- Integrates IoT, drones, and frameworks for audit readiness.

Digital Twin & Simulation



- Virtual representation of mines, processing units, and logistics.
- Test operational strategies, simulate risks, and plan expansions.
- Enhanced situational awareness for management and remote operations.

Centralised Control & Multi-Site Management



- Unified dashboards for real-time monitoring across pits, plants, and ports.
- Integrates with SCADA, ERP, and other existing enterprise systems.
- Scalable deployment from single sites to large mining enterprises.

A Few Use Cases



Open-Pit & Underground Mines

Monitor equipment, workers, and environmental conditions for safety and efficiency.



Tailings, Waste, & Storage Facilities

Monitor structural integrity, slope stability, and environmental impact.



Energy & Utility Infrastructure

Track power, water, and fuel usage across mining operations.



Processing & Refining Plants

Track machinery, material flows, and energy usage for optimal throughput.



Logistics & Ports

Manage ore transport, stockpiles, and vehicle movements across sites.



National and Private Mining Enterprises

Centralised control and monitoring for multi-site operations.



Benefits at a Glance

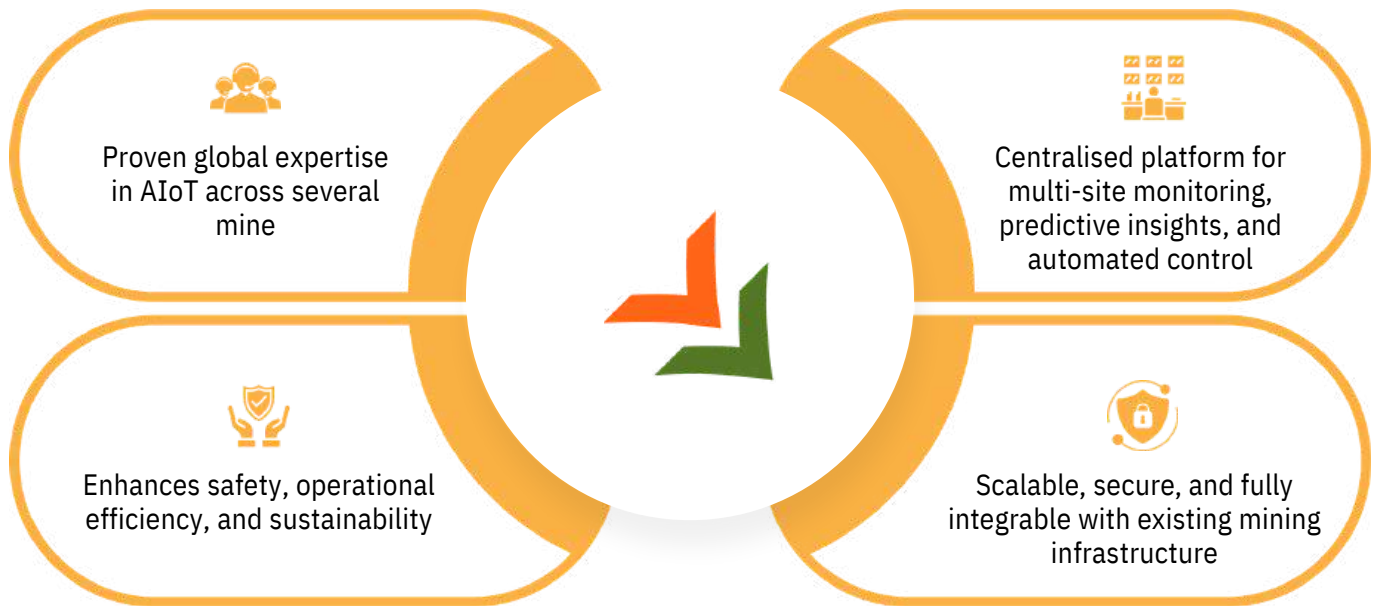
- **Enhanced Safety & Compliance** – Real-time monitoring of workers, equipment, and environmental hazards.
- **Predictive Operational Efficiency** – AI-driven insights to prevent downtime, optimise resource use, and boost productivity.
- **Sustainable Resource Management** – Track energy, water, and emissions to reduce environmental impact.
- **Centralised Intelligence & Situational Awareness** – Unified dashboards and digital twins enable proactive, multi-site decision-making.

Tech Integration

- **IoT Sensors & Edge Devices** – Real-time monitoring of equipment, environment, and worker safety.
- **AI & Analytics** – Predictive insights for operations, equipment health, and resource optimisation.
- **Digital Twin & Simulation** – Virtual replicas for scenario planning, risk assessment, and performance optimisation.
- **Centralised Dashboards** – Unified, multi-site operational visibility.
- **Automation & Smart Alerts** – Automated responses for machinery, safety, and environmental thresholds.
- **Connectivity** – LoRaWAN® and wireless networks for reliable remote data collection.



Why Choose Arnowa?



From Compliance to Competitiveness.

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LoRa Alliance  **localbuy** 

IoTA
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AUSTRALIAN MADE

PREFERRED SUPPLIER



With Arnowa, your mining operations become safer, smarter, and future-ready—aligned with both regulatory and sustainability goals.