

Intelligent Monitoring

Edge IoT & AI: Company Profile

edgeiotandai.com



Connectivity | Data | Intelligence

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| About Edge IOT & AI

Who We Are

Edge IOT & AI is a technology company focused on improving safety, productivity, and operational efficiency by empowering mining engineers to make data-driven decisions.

Edge IOT & AI specializes in providing digital platforms, data integration, and advanced analytics. The company operates as a software-led, hardware-agnostic systems integrator, serving mining operations across Sub-Saharan Africa.

Edge IOT & AI's core value proposition is to help mines transition from paper-based and fragmented reporting to digital, automated, and verifiable operational intelligence. The company provides integrated platforms that capture human inputs, machine data, and real-time operational context, and convert these into actionable insights for mine management.



| About Edge IOT & AI

Our Vision

To become the operational intelligence backbone for mining in Sub-Saharan Africa, enabling safer, more productive, and more transparent mining operations through digital platforms and analytics.

Our Mission

Edge IOT & AI's mission is to enable safer, more productive, and more transparent mining operations by transforming fragmented operational data into trusted, actionable intelligence through software-led, hardware-agnostic digital platforms.



| About Edge IOT & AI

What Sets Us Apart

At Edge IoT & AI, we combine innovation with agility to deliver solutions that truly make a difference.

Here's why our clients choose us:

- **Small, Flexible Teams:** Our compact, expert teams adapt quickly to your needs, ensuring personalized attention and rapid execution.
- **Local Presence:** We operate in the countries we serve, giving you the advantage of on-the-ground support and deep local insights.
- **Fast Turnaround:** From concept to deployment, we move quickly helping you stay ahead in today's fast-paced market.
- **Vendor-Agnostic Solutions:** We design technology strategies tailored to your goals, free from vendor bias, so you get the best fit for your business.
- **All-in-One Platform:** Access multiple IoT and AI solutions seamlessly through a single, integrated platform, simplifying management and accelerating results.



Our Work - Proven Delivery

Edge IOT & AI — Digital Mining

Al Masane Mine

2021–2022

Saudi Arabia

Challenge Low productivity; FOG safety risk.

Solution Underground Wi-Fi; people tracking & evacuation; production monitoring.

Outcome Safer operations; improved productivity.

Ekapa Minerals

2021

South Africa

Challenge Mine flooding risk.

Solution Underground Wi-Fi communication network.

Outcome Faster situational awareness and response.

Lesotho Highlands Water Project

2023, 2025

Lesotho

Challenge Dust & fumes (2023); shaft clearing (2025).

Solution Smart ventilation; access control (turnstiles with time & attendance).

Outcome Safer conditions; energy efficiency; faster shaft clearing.

Kibali Gold Mine

2024

DRC

Challenge Crown pillar failure risk.

Solution Geotechnical monitoring to detect underground voids.

Outcome Risk mitigation and informed decisions.

Blantyre Water Board

2025

Malawi

Challenge Blocked and degraded sewer system.

Solution CCTV pipeline monitoring for assessment.

Outcome Integrity insights and rehab planning.

Rosh Pinah

2025

Namibia — In progress

Challenge Vehicle accidents in haulage operations.

Solution Driver Monitoring System deployment.

Outcome Incident reduction and behavior change.



Our Solutions



| Solution

Mine Communication Networks

Edge IOT & AI delivers robust underground and surface communication networks including private radio, Wi-Fi, Wi-Fi mesh, and private LTE, enabling reliable connectivity for safety systems, fleet coordination, and operations.

Underground and surface mines frequently struggle with unreliable connectivity, creating blind spots in safety, production coordination, and emergency response. Without stable, low-latency communications, digital systems cannot perform consistently across tunnels, pits, or material handling corridors.

Edge IOT & AI deliver mine communication networks designed for harsh industrial environments, including private mobile radio, Wi-Fi, Wi-Fi mesh, and private LTE (PLTE). These networks provide the connectivity backbone required for remote monitoring, automation and control in modern mining operations. Rugged components, pre-terminated cables that do not require splicing and user-friendly network diagnostics tools make it possible to deploy high reliability networks in remote locations where skills are often scarce and spread thin across the operation.

Our mining communication networks provide the infrastructure that supports improved operational coordination, reliable data flow for safety systems, and stronger uptime across connected assets.

Edge IOT & AI — Digital Mining



| Solution

People Tracking & Evacuation

Edge IOT & AI provides real-time people tracking and evacuation solutions for underground operations and hazardous surface work areas, improving visibility of personnel, emergency response, compliance, and overall workforce safety.

The inability to know exactly where personnel are during emergencies can either result in productivity losses or the risk of serious harm to workers. Limited visibility can delay evacuations, hinder rescue response, and increase compliance risk. Edge IOT & AI provides real-time people tracking and evacuation that improves workforce safety and situational awareness.

Using mine-wide communication networks and personnel tracking tags, personnel movement can be monitored across active working zones. The solution is delivered through Delve for underground environments, where centralized monitoring supports emergency preparedness.

Mines benefit from faster incident response, improved evacuation coordination, and stronger accountability for personnel safety. If your operation needs better underground visibility and evacuation readiness, book a consultation with Edge IOT & AI.



| Solution

Digital Inspection Forms

Edge IOT & AI's digital forms for inspection and reporting include templates for risk assessments, pre-use checks, incidents, maintenance inspections, and operational logs, improving compliance, accountability, and decision-making efficiency.

Mining operations often rely on paper-based inspections and fragmented reporting, which leads to missed hazards, delayed maintenance actions, and poor operational traceability. Safety checks, pre-use inspections, incident reports, and daily operational logs must be captured consistently to reduce risk and improve compliance.

Edge IOT & AI offers digital inspection forms that streamline field reporting and operational control. These forms support structured workflows for risk assessments, equipment pre-use checks, incident reporting, maintenance inspections, and production-related operational reporting. Edge IOT & AI supplies rugged handheld and vehicle mounted devices that support digital forms, cloud-based dashboards, and integrated reporting tools that enable supervisors to track completion and trends.

Benefit from faster decision-making, improved accountability, reduced paperwork, and stronger compliance outcomes with our digital inspection forms. To digitize your inspection processes effectively, book a consultation with Edge IOT & AI.

⌚ Pedestrian Detection System (PDS) and Collision Avoidance System (CAS)

Edge IOT & AI's pedestrian detection and collision avoidance system alerts operators and workers in real time, reducing vehicle-related incidents across underground mines, surface operations, and material handling. Edge IOT & AI's pedestrian detection and collision avoidance system is compliant with South African (Mine Health and Safety Council) MHSC Level 7, 8 and 9 requirements and approved by most major OEMs.

Vehicle-pedestrian and vehicle-vehicle interactions remain one of the most serious risk areas on mines. Limited visibility, poor lighting, and confined spaces increase the likelihood of safety incidents involving heavy mobile equipment. Edge IOT & AI's pedestrian detection and collision avoidance system mitigates high-risk interactions by issuing real-time alerts to operators and workers, slowing down and stopping mobile equipment, depending on the risk level assessed for the site. By improving proximity warning capability, mines reduce collision risk, strengthen safety compliance, and protect both personnel and critical assets. PDS and CAS supports safer traffic management in high-risk zones where conventional controls are insufficient. If your mine is prioritizing collision risk reduction, book a consultation with Edge IOT & AI to assess the right deployment approach.





| Solution

Driver Monitoring System (DMS)

Edge IOT & AI delivers driver monitoring systems detecting fatigue, distraction, smoking, cell phone use, seatbelt compliance, and alcohol level, enhancing safety performance across mining and long-distance logistics fleets.

Fatigue and distraction are persistent operational risks in mining operations, contributing to safety incidents that result in equipment damage, lost productivity and personnel injury. Mines frequently face challenges in consistently enforcing safe driving behavior in the face of harsh operating conditions and often conflicting safety and production priorities.

Edge IOT & AI's Driver Monitoring System uses in-cab hardware and advanced software to detect fatigue indicators, cell phone use, smoking, seat belt compliance, and alcohol level where applicable. The system provides real-time alerts to drivers and management through centralized monitoring dashboards available through Kuchera for surface operations and Delve for underground mines.

Benefit from improved safety performance, reduced incident rates, stronger compliance enforcement, and actionable behavioral insights for training and intervention with Edge IOT & AI's Driver Monitoring System.

Fleet Surveillance (360 Degree HD Camera System)

Edge IOT & AI provides 360-degree HD fleet surveillance camera systems that improve, incident investigation, asset protection, and safety monitoring across logistics fleets.

Logistics operators often battle to get correct information about the location of their vehicles and, more so, the true version of events when incidents occur. In material handling, cargo transportation and public transportation environments, blind spots, congestion, and limited oversight can lead to disputes, delayed investigations, and unmanaged safety risks.

Edge IOT & AI provides fleet surveillance through 360-degree HD camera systems installed on vehicles to improve visibility and accountability. Fleet surveillance is delivered through the Kuchera platform, enabling operators to scale their monitoring systems to include speed, fuel and tyre monitoring within a single platform.

Benefit from improved situational awareness, stronger incident evidence, enhanced security, and better behavioral monitoring across critical fleets. To evaluate fleet surveillance for your operation, book a consultation with Edge IOT & AI.





| Solution

Production Monitoring

Edge IOT & AI enables production monitoring for load and haul fleets, conveyor systems, and mining locomotives, delivering real-time performance tracking, utilization insights, and improved operational throughput.

Mining operations frequently struggle to achieve consistent production targets due to limited real-time visibility of equipment utilization, bottlenecks, and downtime across key material movement systems. Without accurate production monitoring, supervisors rely on delayed reporting and incomplete operational data. Edge IOT & AI delivers production monitoring for load and haul fleets, conveyor belts, and mining locomotives, enabling performance tracking across underground and surface operations.

The solution integrates relevant field hardware and operational data streams into Delve for underground production environments and Kuchera for surface and material handling operations. Customers gain live visibility of throughput, cycle performance, delays, and utilization trends that support short interval control. Production monitoring helps identify constraints early, improve dispatch coordination, and strengthen accountability across shifts. To improve production control and performance visibility at your site, book a consultation with Edge IOT & AI.

Fuel Monitoring

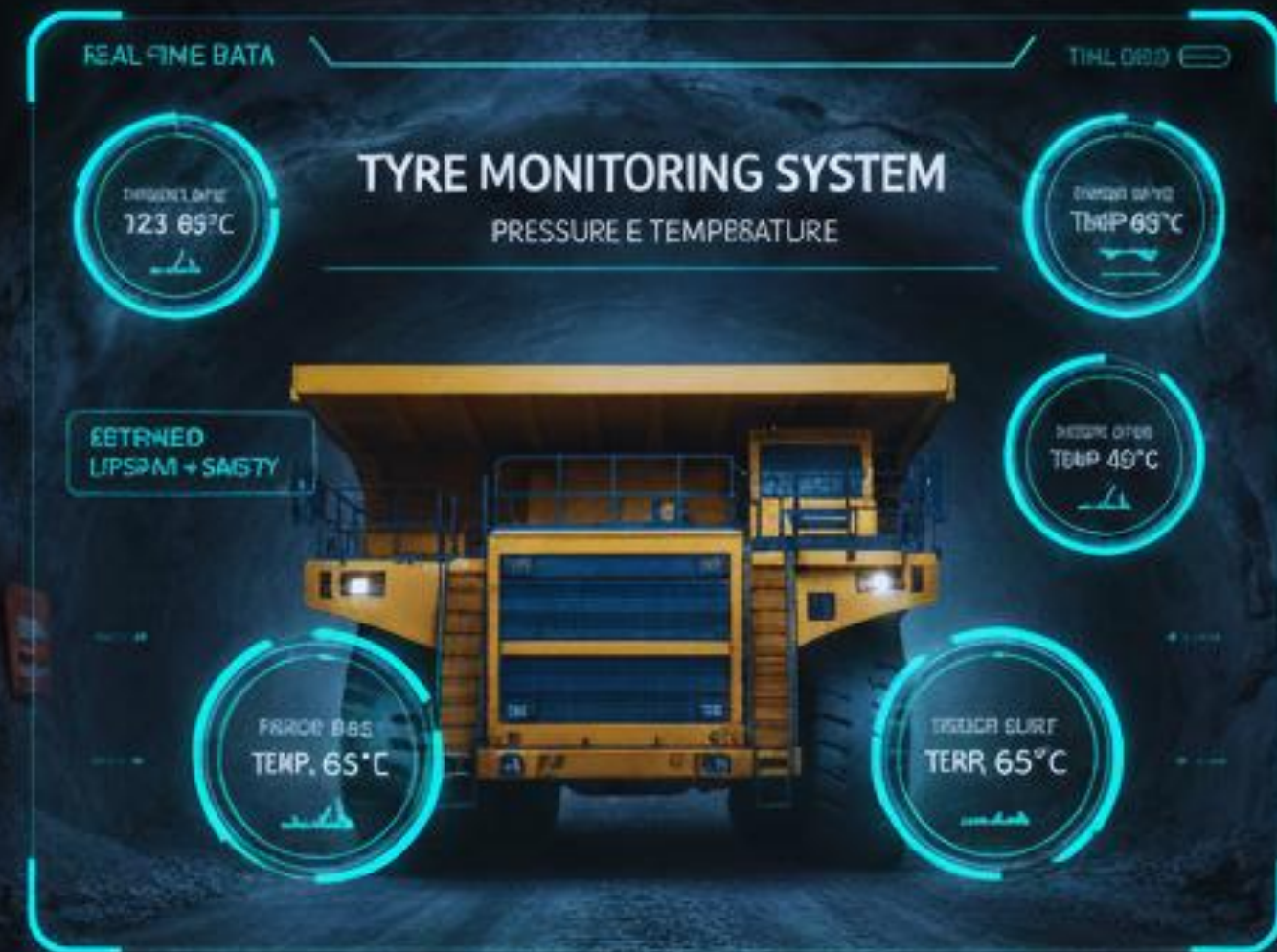
Edge IOT & AI's fuel monitoring solution tracks refueling and consumption; providing geo-location, start and end time, duration and fueling volumes for each event. Our solution thus allows anomalies to be detected, helping mines reduce losses, improve efficiency, and strengthen cost control across equipment fleets.

Fuel is one of the largest operating costs in mining, yet many sites face persistent challenges with unexplained high consumption, refueling irregularities, and limited visibility of fuel efficiency across equipment fleets. Manual fuel controls often fail to prevent losses or optimize usage.

Edge IOT & AI's fuel monitoring solution tracks refueling and consumption; providing geo-location, fueling volumes, event start and end times as well as the duration of each event. Our solution allows anomalies to be detected quickly, helping mines reduce losses, improve efficiency, and strengthen cost control across equipment fleets.

Fuel monitoring supports budgeting and sustainability objectives by providing accurate usage trends over time. To identify fuel savings opportunities and improve fleet cost performance, book a consultation with Edge IOT & AI.





Solution

Tyre Monitoring

Edge IOT & AI provides tyre monitoring systems measuring pressure and temperature in real time, reducing tyre failures, extending lifespan, and improving safety for mining and hauling operations.

Tyre failures are a major safety and cost risk in mining, often leading to unplanned downtime, damaged rims, and hazardous incidents in both underground and surface haulage environments. Many operations lack real-time visibility of tyre condition until failure occurs. Edge IOT & AI's tyre monitoring system measures pressure and temperature in real time, enabling proactive management of tyre health and monitoring of tyre usage patterns.

Hardware components include internal and external tyre sensors installed on mobile equipment, with data integrated into Delve for underground fleet operations and Kuchera for surface and material handling fleets. Customers benefit from fewer blowouts, extended tyre lifespan, improved safety, and reduced operating costs associated with premature tyre replacement. Tyre monitoring also supports maintenance planning and improves equipment availability across production-critical fleets. By identifying abnormal trends early, mines can prevent failures before they disrupt operations.



Solution

Machine Health Monitoring

Edge IOT & AI delivers machine health monitoring for fixed plant and mobile machinery, using sensor data to detect early faults, reduce downtime, and support predictive maintenance strategies.

Mining operations depend on high equipment availability, yet unplanned breakdowns in fixed plant and mobile machinery continue to drive downtime, maintenance cost escalation, and production losses. Many sites lack early warning mechanisms to detect developing mechanical faults. Edge IOT & AI provides machine health monitoring solutions for fixed assets and mobile equipment using sensor-based condition monitoring and centralized analytics. The solution integrates with Delve for underground operational environments and Kuchera for surface plant and fleet monitoring.

Customers benefit from earlier fault detection, reduced unplanned downtime, improved maintenance planning, and longer asset life through predictive interventions. Machine health monitoring strengthens reliability strategies and helps mines move from reactive to proactive maintenance execution. To assess which assets should be prioritized for condition monitoring, book a consultation with Edge IOT & AI. Lower maintenance cost



All About Kuchera

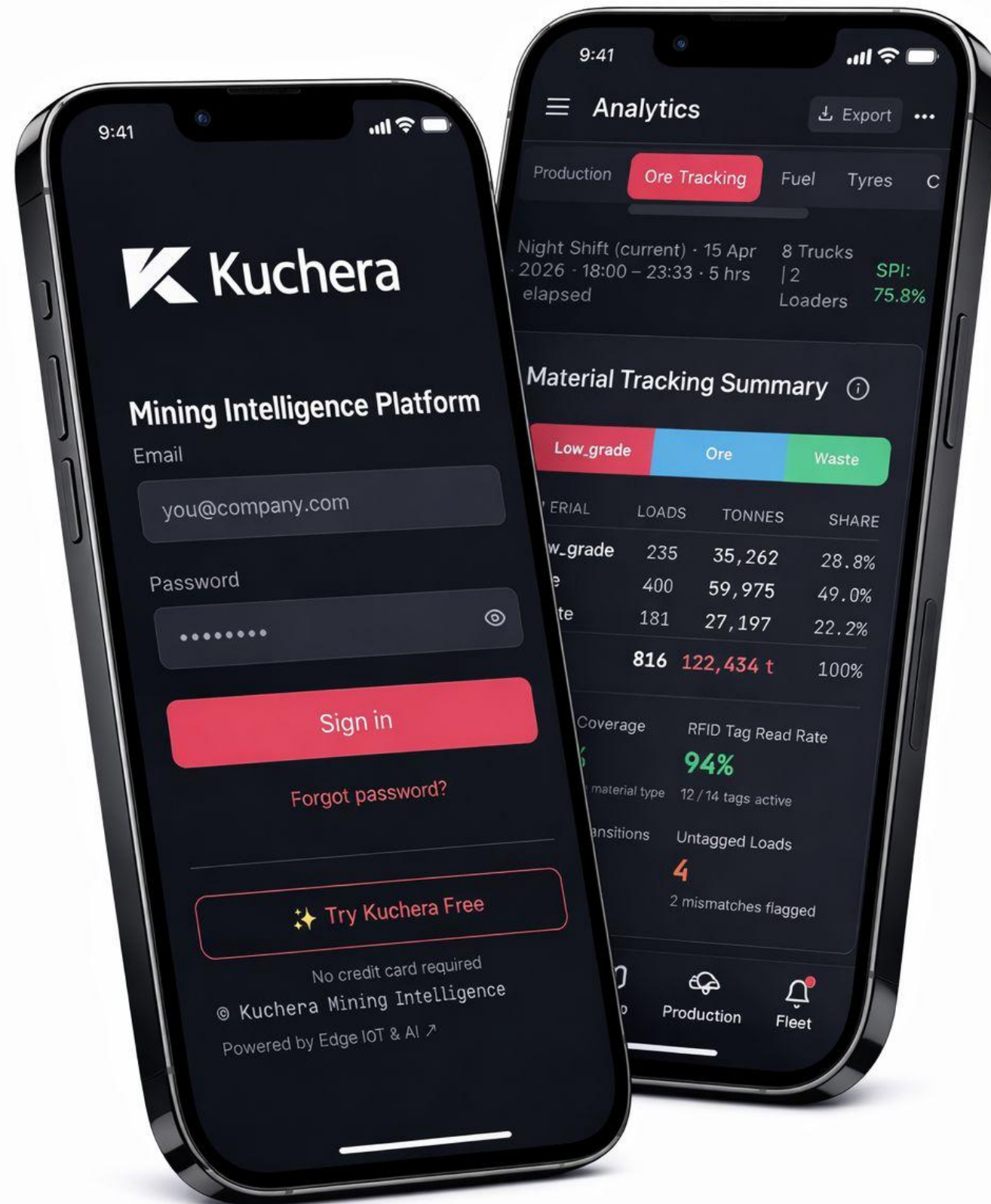
A unified view of mine operations

Kuchera is a digital mine operations management platform that brings together multiple monitoring systems into one unified operational view. Kuchera is ideal for real-time monitoring and trend analysis for personnel, mobile and fixed equipment in surface and underground mines.

Core Features

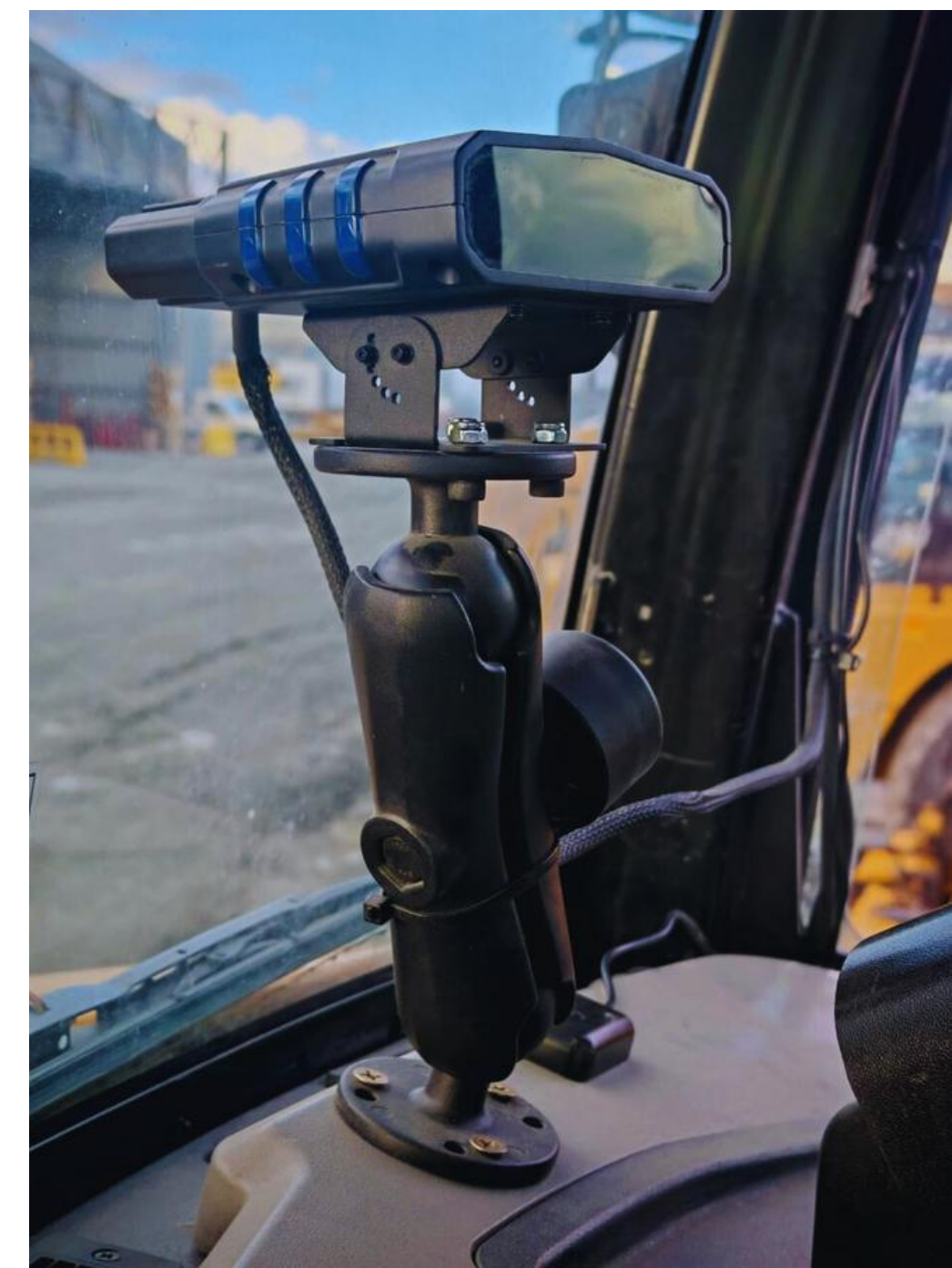
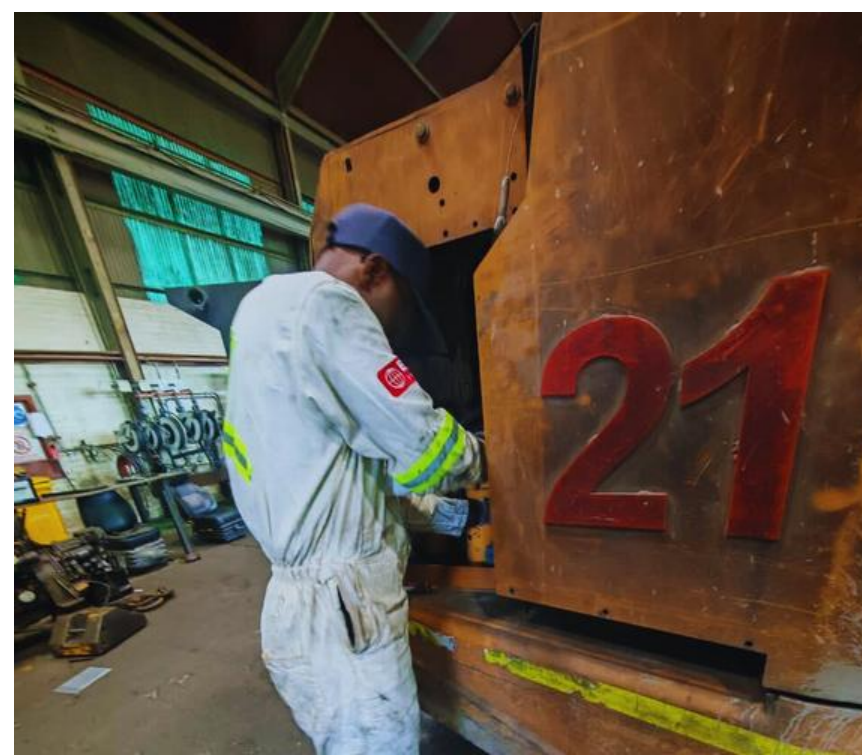
- Availability & Utilization
- Production monitoring
- Equipment health
- Driver Monitoring System
- 360 Degree Vehicle Camera
- Tyre monitoring
- Fuel monitoring
- AI-driven analytics

**FULL SHIFT
VISIBILITY.
ZERO GUESSWORK.**





We Are Edge IoT & AI



Our Footprint



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4

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Thank you!