minedeck

Environment, Workplace safety & PPE

POWERED BY
365mesh

Smart monitoring, detection, and alerts with AI/ML capabilities

All in one IoT Solution

www.365mesh.com

IoT Platform for mining and earth moving

Minedeck is an end-to-end IoT management solution designed for mining, earth moving and other heavy machinery industries with large infrastructure and construction projects.
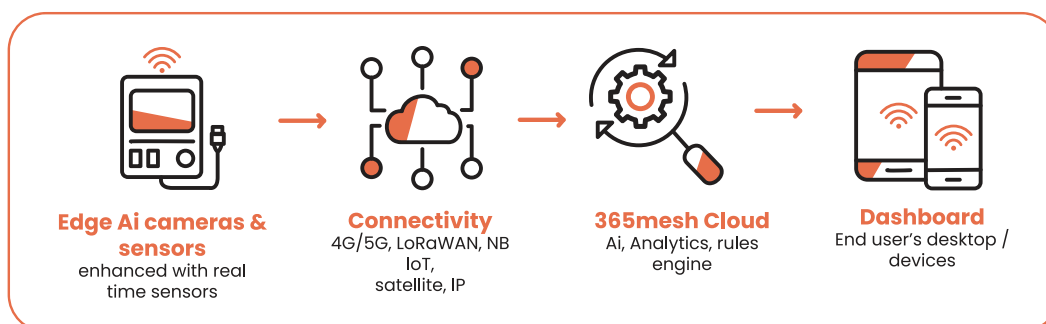
Minedeck utilises advanced Ai and machine learning technologies, as well as purpose-built sensors to aid companies in monitoring their worksite environment by providing continuous real time monitoring with early detection and warnings of potentially hazardous conditions. Minedeck's monitoring will also allow for the automation of tedious tasks to attain workplace efficiencies, whilst maintaining high levels of safety and insights for workers on site.

Minedeck also aids companies to reduce worksite accidents and fatalities by providing early detection and warnings of potential high-risk accidents before they occur, and by monitoring and implementing the correct use of protective equipment to help companies comply with industry health and safety standards.

Our organisation has over a decade of experience in networking technologies and security, which form an integral part of the underlying architecture required for IoT networks. Our extensive network engineering capabilities give us a unique ability to understand and deploy every component of an IoT network.

Our solution has been developed in Australia and New Zealand, with manufacturing facilities in New Zealand and our team of engineers providing installation and support services nationally.

IoT SolutionsSecure end-to-end IoT Solutions with advanced artifical intelligence capapbilities

Edge Ai cameras & sensors
enhanced with real time sensors

→

Connectivity
4G/5G, LoRaWAN, NB IoT, satellite, IP

→

365mesh Cloud
Ai, Analytics, rules engine

→

Dashboard
End user's desktop / devices

Anywhere, Anytime Connectivity

- › Ethernet
- › LoRa
- › Wifi
- › Satellite

Managed Services Provider operating

24x7x365 days

NOC (Network Operations Centre) in Sydney and Melbournerne.

100% coverage

of earths land and water surface areas

Use Cases

Environment Monitoring
Monitor and record various environmental readings on site such as noise, vibration, temperature, air quality and gas.

PPE monitoring and detection
monitors and implements the correct use of protective equipment to help companies comply with industry health and safety standards.

Energy Consumption
Monitors and provides a report consolidating the worksites' overall electricity and water consumption on per day, week, month, and year.

Solar solutions monitoring
Monitor solar energy and other renewable energy sources used to generate electricity, run air conditioning and lighting, and charge battery banks.

Weather monitoring
Monitor the site's temperature, humidity, wind, rainfall, and water flow pressure. Use data to make educated decision around boring and mining the field.
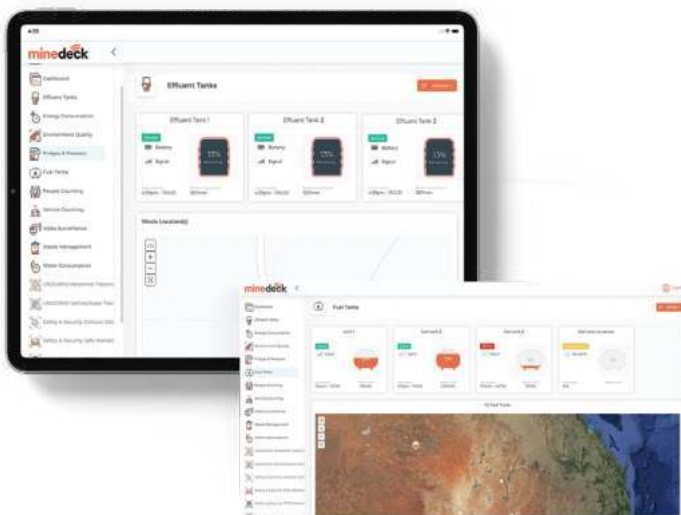
Fuel tank monitoring
Monitor fuel tank levels in real time and receive alerts when tank levels reach a certain threshold.

Monitor Oil with inflow sensors to measure - dieletric, resistivity density, viscosity, temperature (to determine issues such as water ingress, cooling leaks, etc)

Effluent Tanks
Effluent tanks solutions provides real-time monitoring of portable and drop toilets so that maintenance teams can optimise their cleaning schedules.
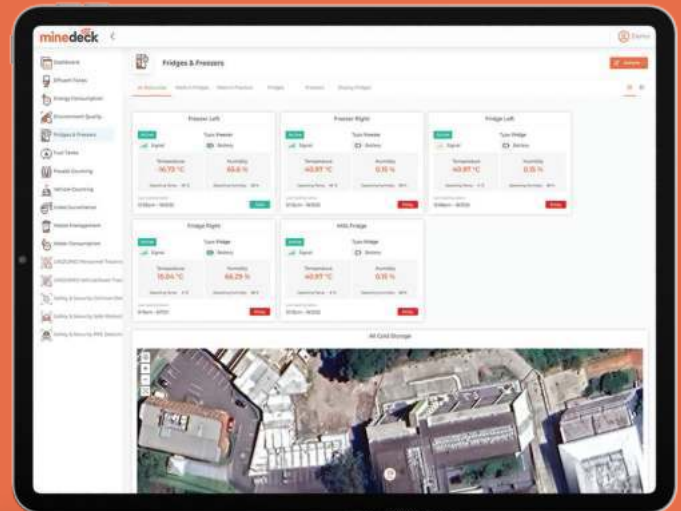
Waste management
Monitors and differentiate the type and quantity of waste generated on site, proportions of waste, recycling vs landfill waste, and sources of waste

Fridge & freezer temperature monitoring
Monitor the temperature of mining chillers and compressed air dryers to avoid any equipment from overheating

People counting
(above and underground)
Count and keep track of workers entering underground and on site to ensure each personnel is always accounted for.

Vehicle counting
(above and underground)
Count and keep track of vehicles, machinery and assets entering underground and above ground.
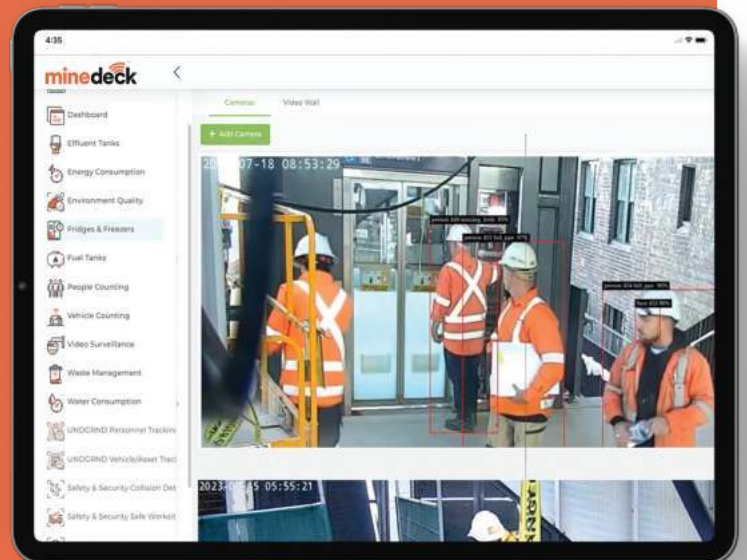
Smart Video surveillance
accurately monitor and detect for property intrusion, theft and provides real time location information.

Theft detection with real time notifications
Monitor people and vehicles who enter and leave worksite, with real time notifications being directly sent to security personnel on duty via their phones or devices.

Secure Access Control
only give access to specific areas on site to certain people at certain times.

Workplace Project Timelapse
(With onsite cameras and via satellite imagery)
Periodic satellite imagery of projects will allow companies to create a historical progression timeline of the mining

Digital twin
Virtually gain visibility of the mining site (above and underground) and collect data with environment simulations

Environment Monitoring

Minedeck provides the rapid deployment of mobile solutions that can perform continuous real-time monitoring of air quality including silica dust, carbon footprint, hazardous gases and various other elements including:

> Carbon Dioxide
> Civil CO
> Particle Matter 1.0/2.5/10
> Civil Gas
> Formaldehyde
> Ammonia
> Oxygen

> Ozone
> Hydrogen Sulfide
> Nitrogen Dioxide
> Sulfur Dioxide
> Chlorine Gas
> Total Volatile Organic Compounds
> Respirable Crystalline Silica

Air quality monitoring and detection of hazardous air Particles

Monitor air particles such as crystalline silica dust, and automatically alerts control rooms of any abnormalities in the air.

Hazardous chemicals detection, monitoring, and alerts

monitors and detects components such as carbon monoxide, nitrogen oxides, black carbon (above and underground) and alert control rooms of any abnormalities.

Gas monitoring

Fixed and portable gas monitors detect the presence of toxic, asphyxiant and explosive gases such as methane, hydrogen sulfide and oxygen deficiency/enrichment.

Vibration Monitoring and alerting

Monitors vibration performance in real time and triggers immediate alerts to prevent regulatory thresholds from being breached.

Ventilation units monitoring and alerts

Monitors the condition of air flow through ventilation units. Alerts are sent to authorised personnel when units are faulty or inactive.

Carbon Footprint monitoring and reporting

Monitors the air quality and greenhouse gases such as carbon dioxide, methane, ozone, and nitrous oxide. Data collected assists to make educated decisions to mitigate carbon emissions.
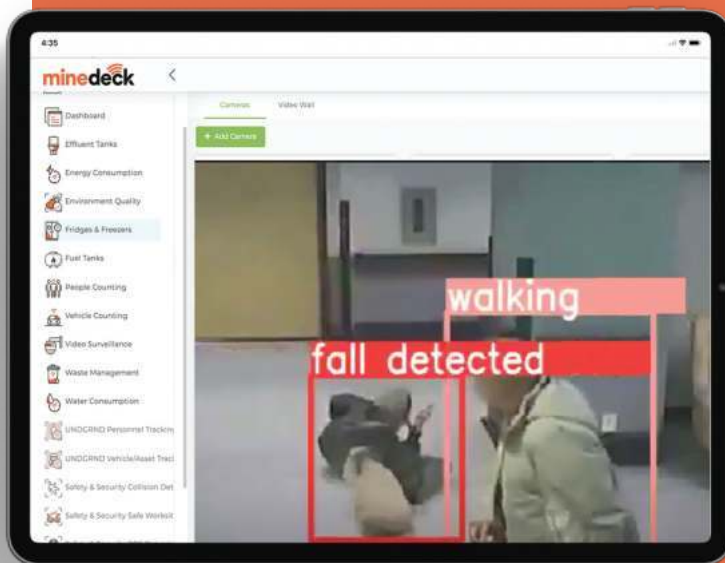
On site operational health, safety and PPE

Safety PPE Detection
Identifies PPE items (hard hats, mask, safety vests, safety goggles etc) and monitors whether workers are properly wearing it while on site.

RFID Tags
Utilise RFID tags which can track and identify workers who do or do not comply with PPE standards.

Person down detection
Detects when a person has fallen/tripped and triggers instant alerts.

Reports on trips and fail detection
keeps a count record of areas with repeated trips and fall incidents and identifies hazardous areas.

Personnel and vehicle site access & tracking and monitoring
Utilise tags and facial recognition to implement site safety monitoring and track assets in real time.

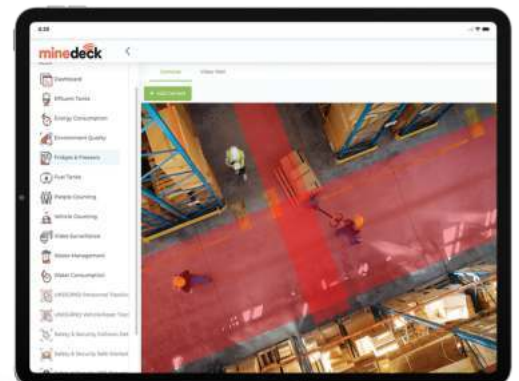### Create virtual boundaries/GEO fencing
create a virtual exclusion zone and receive real time alerts when an unauthorised worker enters the exclusion zone, Integrates with excavators and machinery, and stops machinery if the virtual boundary is crossed.

Detect potential workplace incidents
Determine safe distances between workers and machinery with exclusion zones.

Pedestrian vehicle/machinery accident detection
Detects when a moving person and vehicle are in a potential path of collision and advises of safer walking path practices.

Monitors high noise level environments

Monitors noise levels from activities such as boring, drilling, digging and loud machinery vehicles and vibration performance in real time.

Object identification and differentiation

Ai capabilities to accurately identify and differentiate between people demographics, vehicle types, machinery assets, and provide real time location information.

Rapid deployment of mobile solutions

Minedeck monitoring and detection solutions can be deployed anywhere with mobile trailers with cameras and sensors that can be mounted onto telescopic poles, vehicles and onsite

Your security is our priority.

Data collected from the sensors is owned by the customer and data is stored locally on customer premises with optional backup in the cloud.
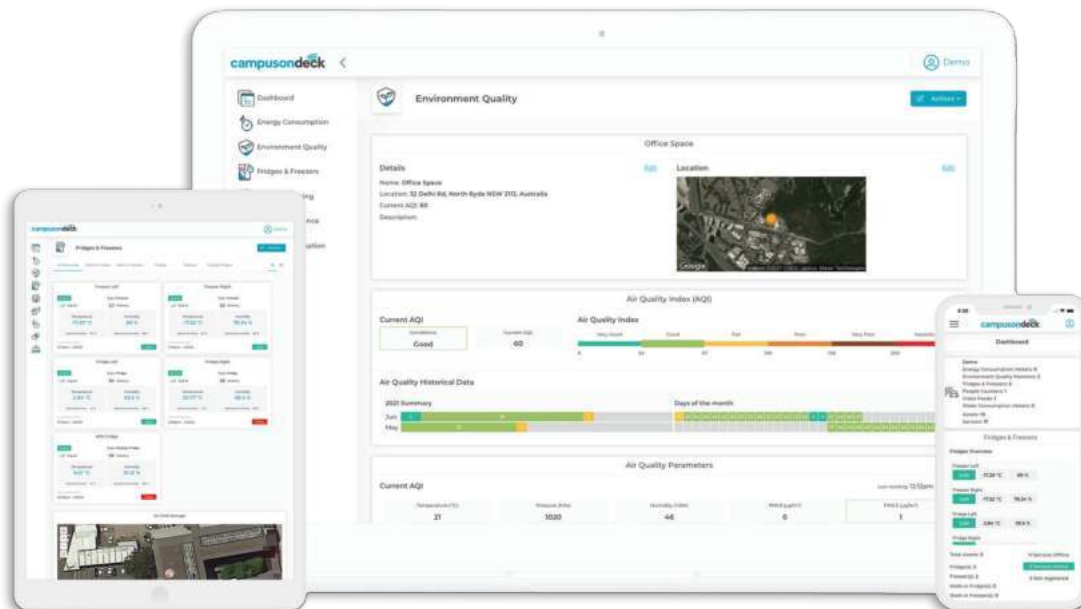
Locally manufactured in Australia for fast shipping and local support

> **Rapid prototyping**
> **Injection moulding**
> **Assembly and shipping**

> **Electronics PCB**
> **Hardware testing**
> **Manufactured by experiences engineers**

Get real-time visibility of your environmentand facilities with 365mesh IoT portal.

WE ARE FOUND GLOBALLY

North America

Spain

Malaysia

South Africa

Australia

New Zealand

Contact us

Visit our Website: **www.365mesh.com**
Email us: **sales@365mesh.com**

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