UNDERGROUND WORKINGS · PREPARED FOR SOUTH AFRICAN MINES

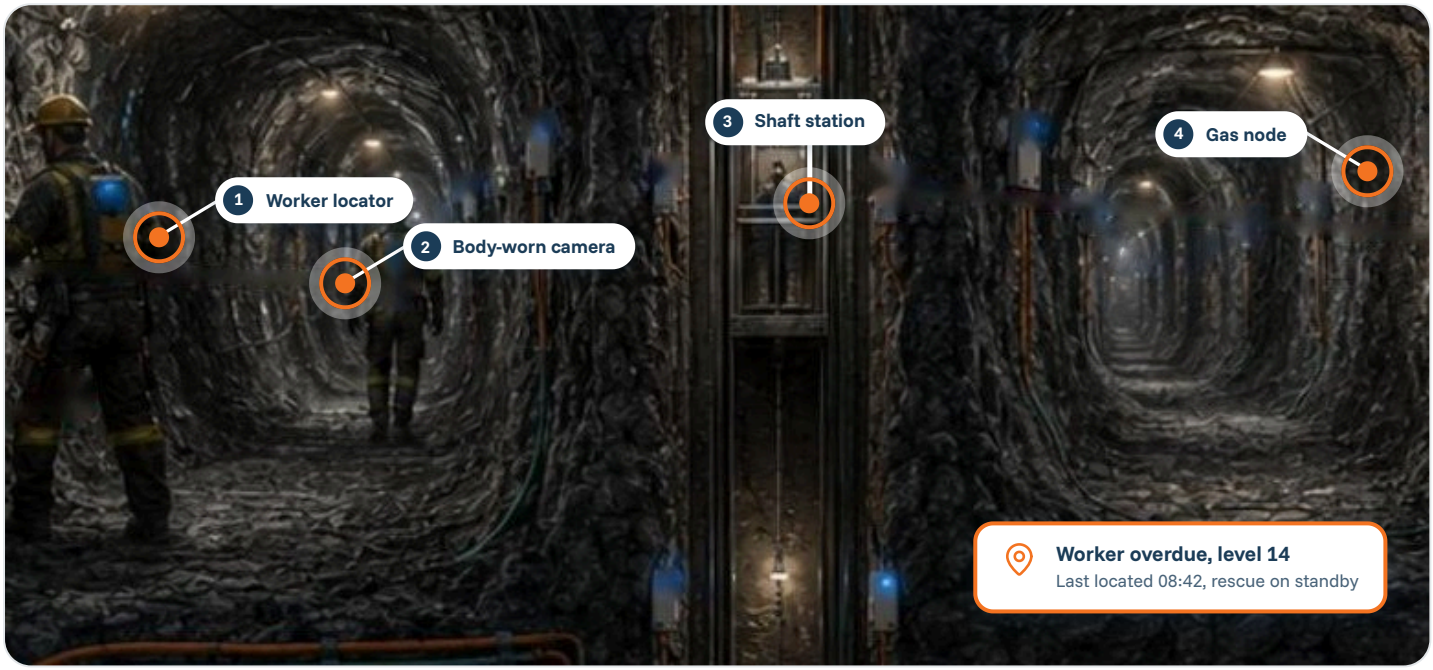
Every person underground, located.

How intrinsically safe locators, gas nodes and underground radio show where every worker is, not where they were.



In the underground workings

ILLUSTRATIVE SCENE



A

SCENARIO A

Located on every shift

Check in
Workers are tagged at the shaft and tracked underground.

Locate
Location updates as they move through the workings.

Talk
Underground radio links teams to the control room.

Zones and readers are set with your mine engineers.

B

SCENARIO B

When something goes wrong

Alarm
A panic press, gas reading or fall raises the alarm.

Roll call
The control room sees who is in the affected area.

Rescue
Proto teams are sent to a known location.

Underground devices carry intrinsic-safety certification for gassy mines where required.

One response, whichever way the alarm starts

in the control room on surface

01
Locate
Every worker, by level and zone.

02
Count
Live roll call per area.

03
Talk
Underground radio and PTToC.

04
Rescue
Teams sent with location.

05
Record
Logged for the inspector.



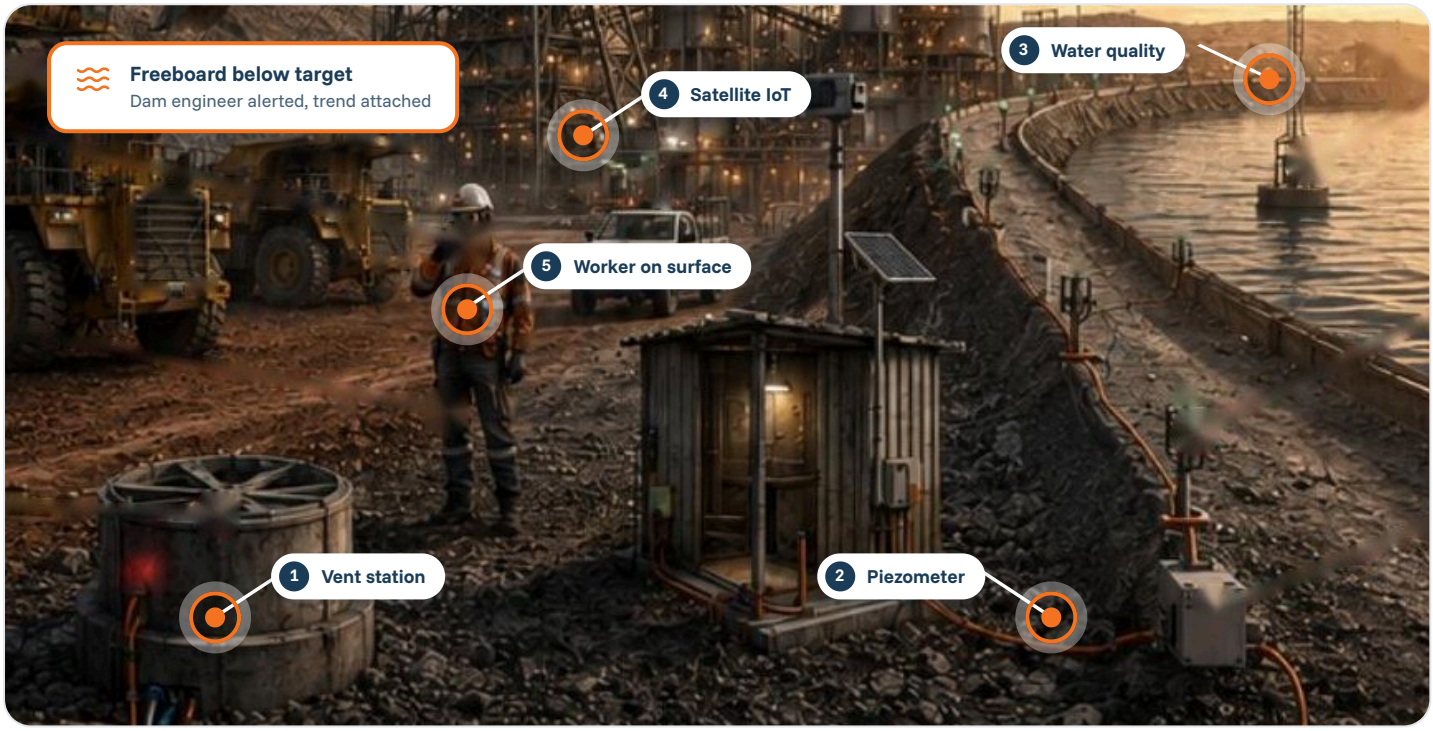
SURFACE OPERATIONS · PREPARED FOR SOUTH AFRICAN MINES

Readings from the vent to the dam wall.

How ventilation, tailings and water sensors replace manual rounds with continuous, evidenced readings.

Across the surface operations

ILLUSTRATIVE SCENE



A

SCENARIO A

Continuous readings

Ventilation
Air velocity, temperature and gas at each station.

Tailings
Piezometers, freeboard and movement on the dam.

Water
Quality and flow at discharge points.

Limits are set with your environmental and ventilation officers.

B

SCENARIO B

When a reading moves

Alert
A breach alerts the responsible engineer.

Context
The trend shows how fast it is changing.

Act and record
The action taken is logged against the reading.

Remote dams and shafts use Kinéis satellite IoT where there is no signal.

What the environmental team sees

in the control room or on a tablet

01
Ventilation
Every station, live.

02
Tailings
Freeboard and movement.

03
Water
Quality and flow.

04
Reports
30 and 90-day audit reports.

REFUGE BAYS · PREPARED FOR SOUTH AFRICAN MINES

Every refuge bay ready, proven.

How refuge bay sensors check air, seals, power and supplies continuously, without a manual descent to sign a book.

Inside the refuge bay

ILLUSTRATIVE SCENE



A

SCENARIO A

Ready, every day

Air
Oxygen, CO2 and scrubber status are read continuously.

Seals
Door and seal state are checked.

Supplies
Consumables and expiry dates are tracked.

Readiness criteria are set with your safety department.

B

SCENARIO B

When the bay is in use

Occupied
The control room sees who entered the bay.

Life support
Air quality is watched for every occupant.

Contact
Comms link to surface is kept open.

Readings are time-stamped and kept as evidence for the inspector.

What the safety department sees

in the control room on surface

01
Readiness
Every bay, ready or not.

02
Air
O2, CO2 and scrubbers.

03
Power
Battery and supply status.

04
Supplies
Expiry and stock levels.

ONE PLATFORM · PREPARED FOR SOUTH AFRICAN MINES

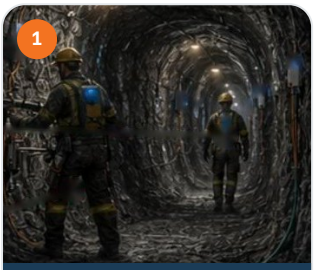
Three solutions. One view of the mine.

Each solution works on its own. All three run on Sentiv.IoT, so the control room, safety, engineering and environmental teams share one live picture of the mine.



Every feed, one screen

ILLUSTRATIVE VIEW



Underground



Surface

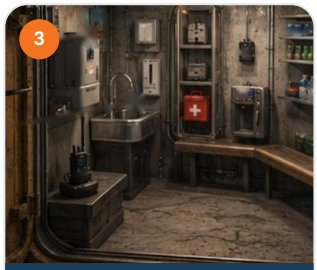
Sentiv.IoT · Mine overview — MAIN SHAFT · LIVE

1 · UNDERGROUND
412
workers located
1 overdue

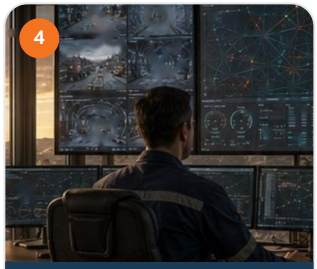
2 · SURFACE
28
stations reporting
All in range

3 · REFUGE BAYS
12
bays ready
1 attention

PLATFORM
30-day
audit report ready
Signed off



Refuge bays



Control room

How it fits together

Sense
Locators, gas nodes, vent, tailings, water and refuge bay sensors

Connect
Underground radio, PTToC, LTE and Kinéis satellite IoT, with last-mile fibre, LTE, 5G or fixed wireless

Sentiv.IoT
Maps, alerts, dashboards and work orders for every team, locally hosted

Record
One timeline of locations, readings, alarms and responses

What one view makes possible

SOLUTIONS COMBINED

1 Underground · 3 Refuge
Who is in the bay
Locating shows who reached each refuge bay.

1 Underground · 2 Surface
Gas to evacuation
A gas reading shows who is in the affected area.

2 Surface · 3 Refuge
Air from surface to bay
Ventilation and refuge air seen together.

1 Underground · 2 Surface
Proximity evidenced
Vehicle and pedestrian events linked to location.

All three solutions
Every team, the same picture
Each team sees its own view, drawn from the same live data, so nobody works from an old report.

1 Underground · 2 Surface · 3 Refuge
One record for the inspector
Locations, readings and responses in one evidence trail.

Start with one. Grow on the same platform.

1. **Underground locating first**
Locating every person underground is the most urgent obligation, and the first feed into Sentiv.IoT.

2. **Add surface and refuge bays**
Environmental and refuge readiness on the same platform.

3. **Extend to every shaft**
Other shafts and operations join the same view.