

Intelligent Dump Bodies

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NEXUS MINE



DURATRAY

Our Vision

If we want to extract mining resources in a safer and more sustainable way, while optimizing productivity, the mining industry must adopt technological solutions 4.0.

Nexus Mine is a holistic system that uses state-of-the-art hardware, software and communications, to bring advanced analytics and real time information to its clients.

Our Company

NEXUS MINE brings together **Industrial Revolution 4.0** and **Mining Equipment**.

Transforming **Digital Mine Analytics** into the future of Mining, to achieve:

- operational productivity,
- safety performance, and
- minimal environmental impact.



Smart Tray 4.0

With more than 40 years of experience designing and developing innovative Mining Truck Dump Bodies in more than 30 countries in 5 continents, the new evolution for the Mine of the Future is:
NEXUS MINE

Nexus Mine has developed the first mining *Smart Tray*, bringing the 4th Industrial Revolution to the mining truck digital transformation, to face the critical challenges of mining: Productivity, Safety, and Sustainability.

Nexus Mine allows customers to make decisions in real-time via data monitoring and alerts, as well as planning preventive maintenance by analysis of site data, utilising an advanced automated analytics system that can predict failure and optimize operational performance.



Global Operations

Nexus Mine operates and delivers its services widely in all continents, enjoying increased levels of acceptance in open-pit mines for minerals such as copper, nickel, bauxite, iron ore, gold, diamond and coal.

Global Presence



CANADA ●

RUSIA ●

MADRID ●

TURKEY ●

MIAMI ●

CHINA ●

PERU ●

INDONESIA ●

ANTOFAGASTA ●

JOHANNESBURG ●

SOUTH AFRICA ●

PERTH ●
PERTH ●

MACKAY ●

CHILE ●

BRISBANE ●

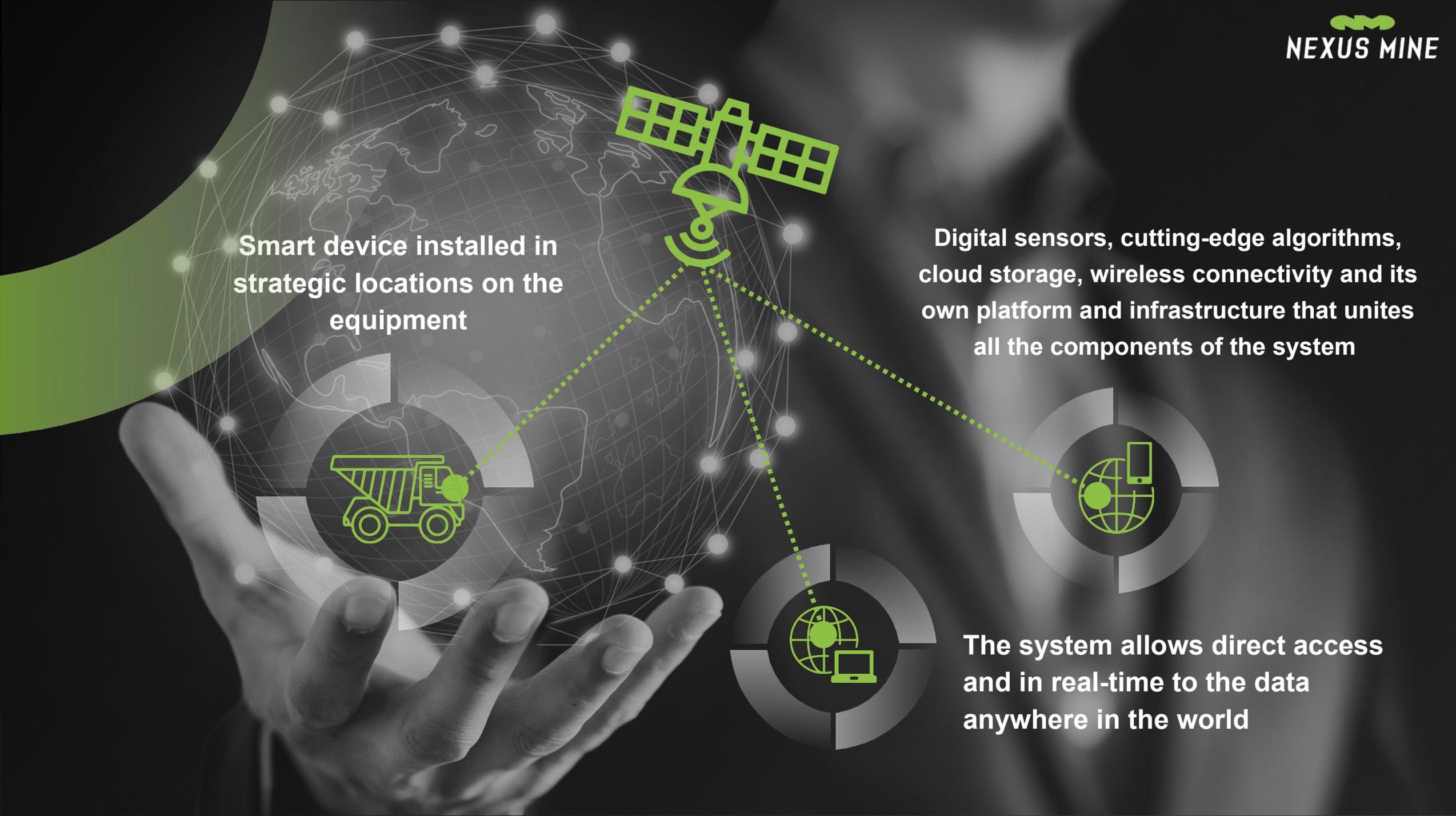
MELBOURNE ●



Offices



Fabrication



Smart device installed in strategic locations on the equipment

Digital sensors, cutting-edge algorithms, cloud storage, wireless connectivity and its own platform and infrastructure that unites all the components of the system

The system allows direct access and in real-time to the data anywhere in the world

Main Design Features

The Smart Tray 4.0 is truck independent, hence it can be deployed on hybrid fleets, allowing the customer to access their whole fleet from a single system for a fraction of the cost.

Independent (from the truck OEM)



Compact and light weight (5 kg) device



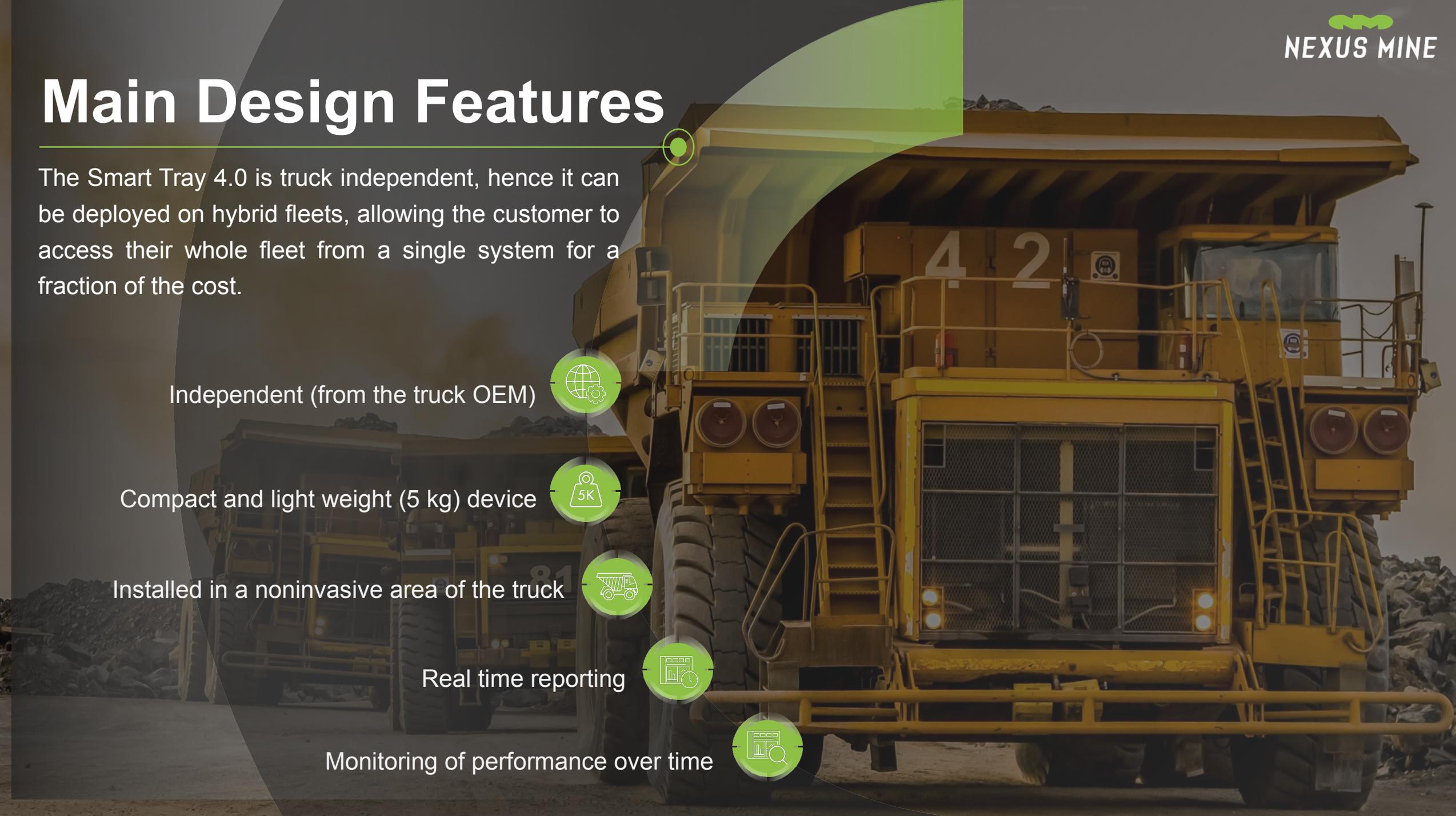
Installed in a noninvasive area of the truck



Real time reporting



Monitoring of performance over time



Mine of the Future

Wear Monitoring

Fuel Monitoring

Cycle Analytics

Failure Prediction

Emissions Analytics



Cutting Edge Technology for Operations Management

- Asset tracking of each truck of the fleet
- Fleet availability & utilisation
- Production performance
- Cycle timing analysis
- OHS: Speed monitoring & alerts
- OHS: Monitoring of the slope of the roads
- Fuel and Emissions optimization

Smart Tray 4.0. Modules



**Cycle
Analytics**



**Wear & Fatigue
Management**



**Live
Vision**



**Fuel & Emissions
Analytics**



Cycle Analytics

- ✓ Operational Time Asset Utilisation statistics
- ✓ Speed Avg Speed
Speed Alerts
- ✓ Cycles Average cycle time
Cycles per period of time
- ✓ Availability Availability per Truck/Fleet
- ✓ Operational Performance Production / Target ratios



Cycle Analytics

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Navigation: Home, Cycles Analytics, Summary Dashboard, Trucks Ranking, Cycles Details, Asset Management, Live Vision, Logout

Date Range: 17/10/2022 - 18/10/2022 | Fleet: CAT 777F | Truck#: TK043

12 # Cycles	00:23m Avg. Cycle Time	1.7Km Avg. Cycle Distance	99% of Target Payload	95 Tonnes Average Payload	Availability 91%
20.87 Avg. Cycles per day	06:57am Avg. Starting Time	06:03pm Avg. Ending Time	Utilization 42%		

Map: Antofagasta

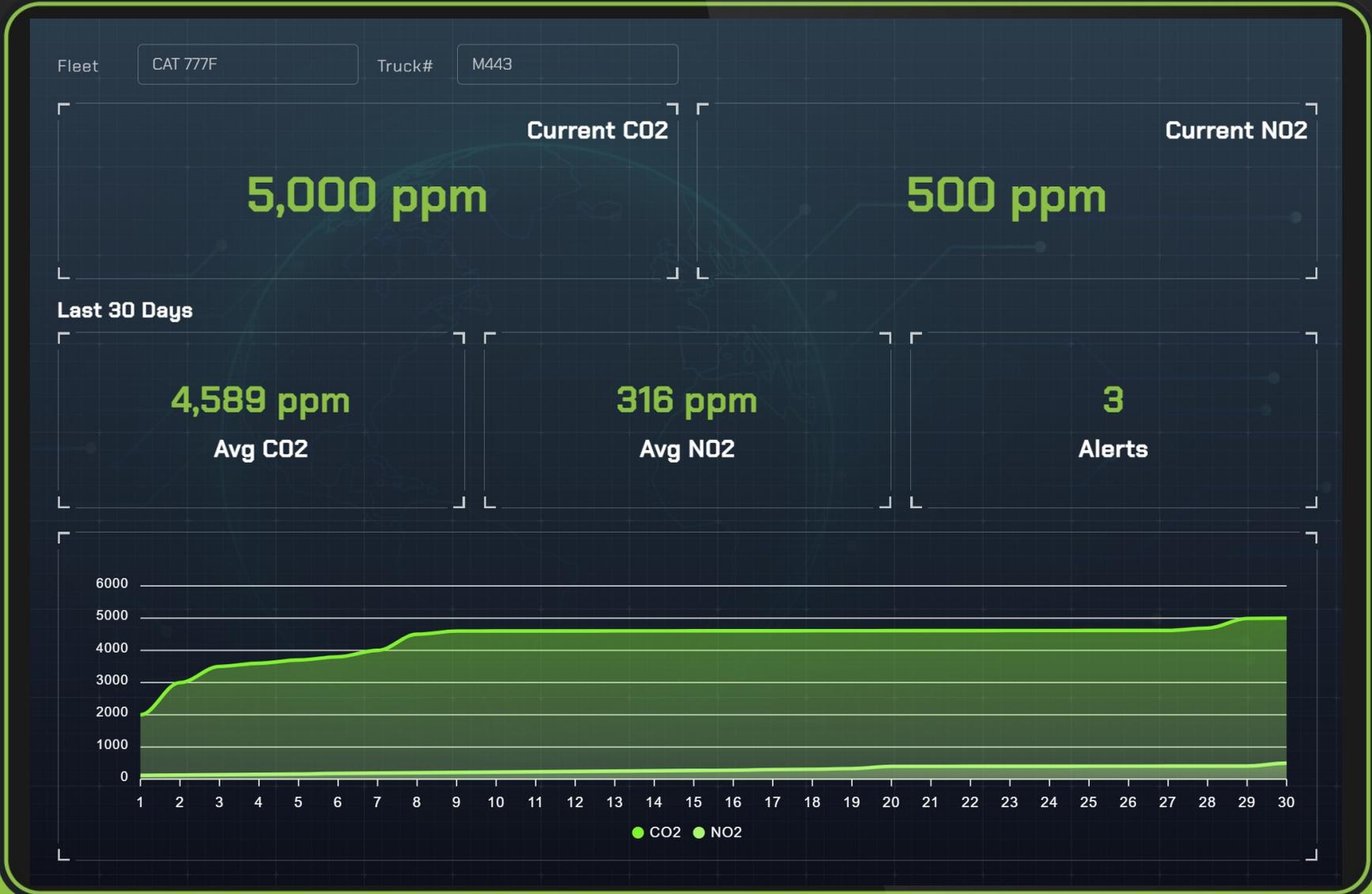


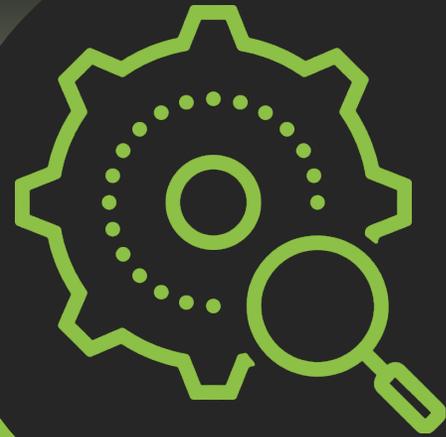
Emissions & Fuel Analytics

- ✓ CO2
CO2 statistics
CO2 Alerts
- ✓ NO2
NO2 statistics
NO2 Alerts
- ✓ Fuel
KMs per Litre
Tonnes per Litre
Litres per Hour
- ✓ Other Gases
SO2, CO, NO, HC, PN, PM



Emissions Analytics





Asset Management

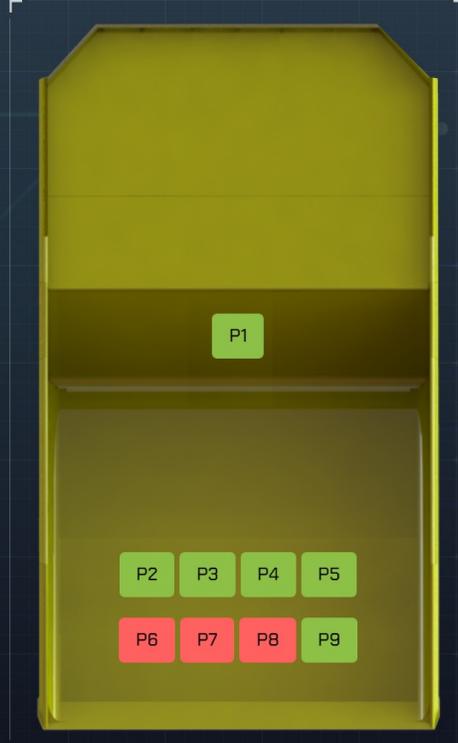
- ✓ Wear Management

- ✓ Impact & Vibration hot-spots

- ✓ Fatigue Analysis

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Navigation	Position	Sensor ID	Connection	Thickness	Battery
Home	P1	M454P1	■	20mm	80%
Cycles Analytics	P2	M454P2	■	16mm	80%
Asset Management	P3	M454P3	■	14mm	80%
Live Vision	P4	M454P4	■	16mm	70%
Logout	P5	M454P5	■	16mm	80%
	P6	M454P6	■	6mm	70%
	P7	M454P7	■	6mm	70%
	P8	M454P8	■	6mm	70%
	P9	M454P9	■	14mm	80%





Asset Management



Live Vision

Smart 4K Cameras strategically installed on the Dump Tray to send images and video clips in real time:

- ✓ Detection of uncrushable items inside the tray
- ✓ Detection of uncentred loads
- ✓ Monitoring of carry-back
- ✓ Monitoring of fragmentation quality
- ✓ Monitoring of operational damage to the tray
- ✓ Monitoring Loading practices

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Navigation

- Home
- Cycles Analytics
- Asset Management
- Live Vision
- Live Camaras
- Library
- Logout

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Zone A



SHOW TAKE PIC A

Zone B



SHOW TAKE PIC

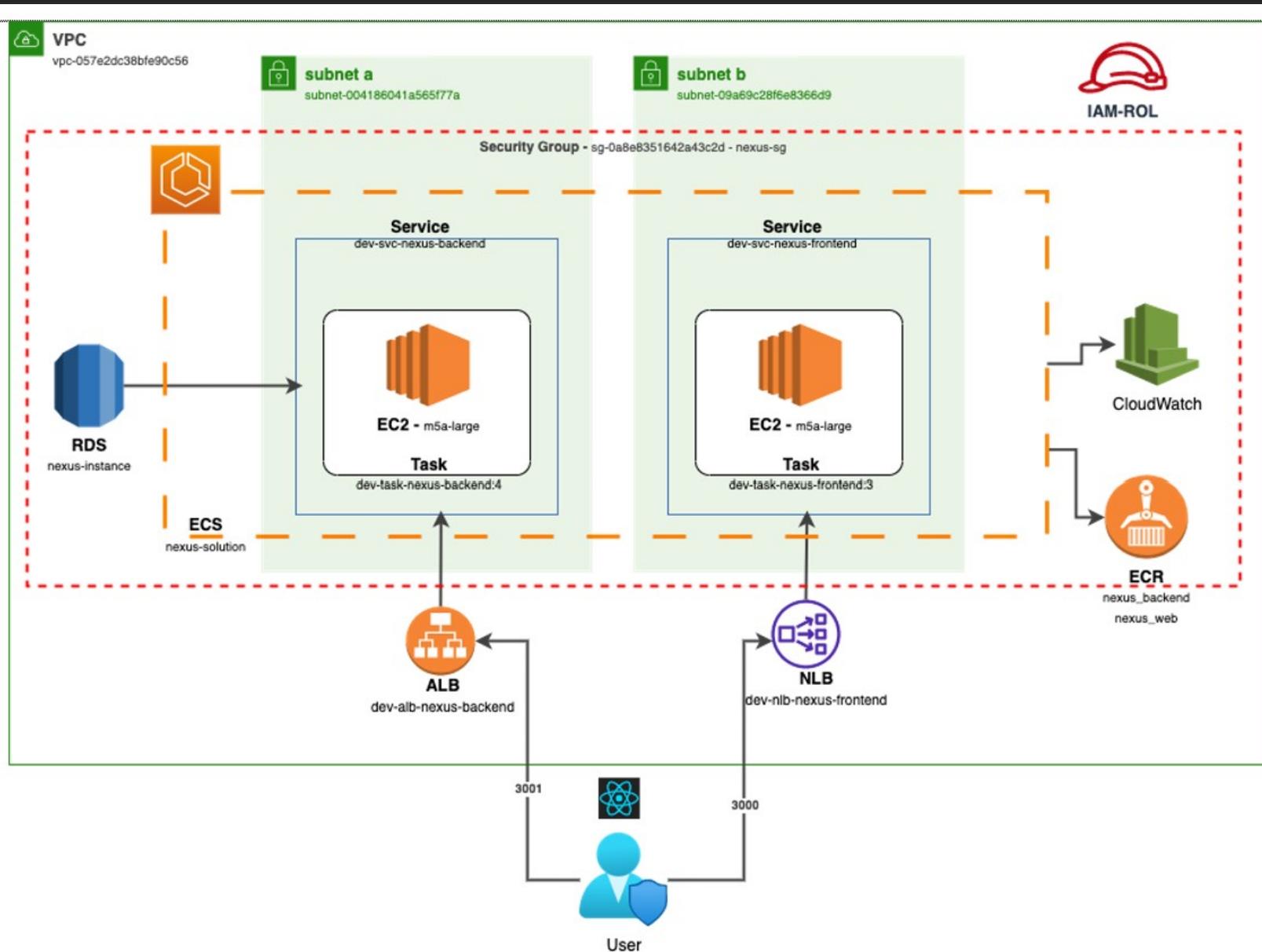


Live Vision

Case Studies

Western Australia, Mineral Sands, CAT777

Chile, Copper, CAT797 & KOM960E





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