

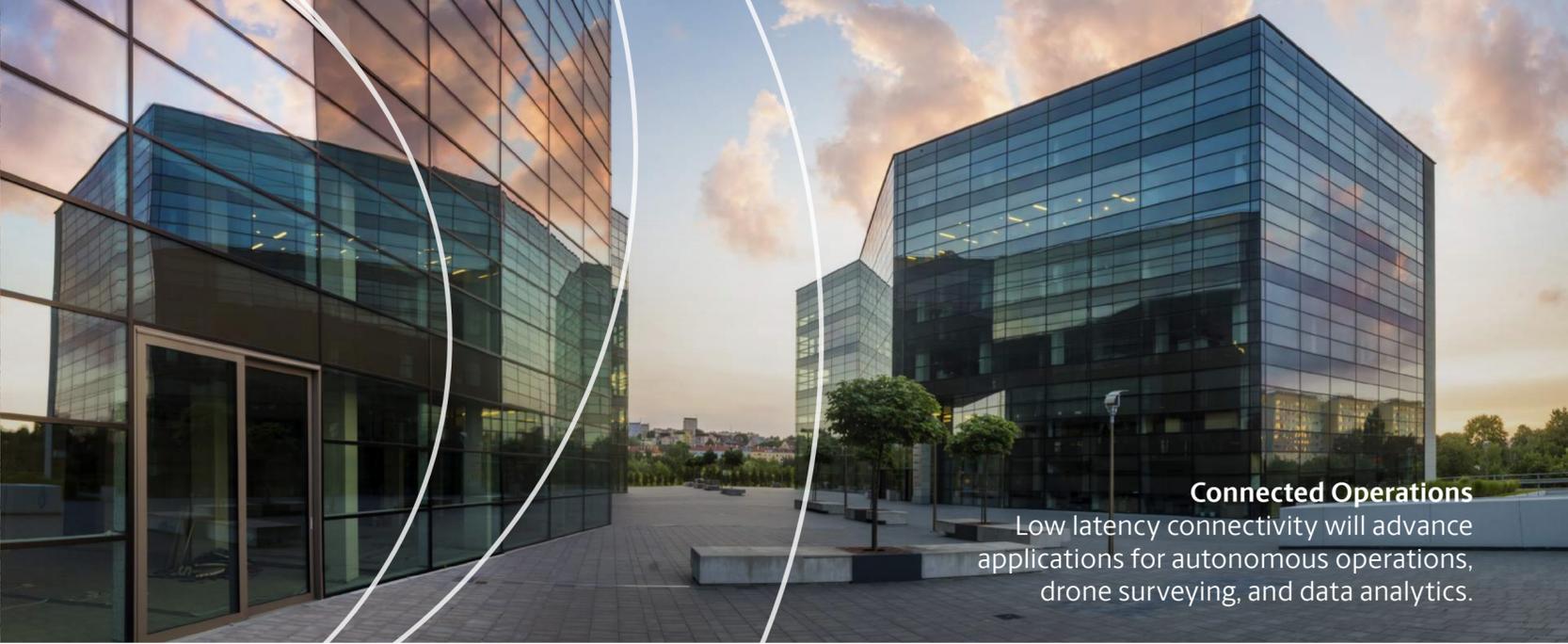


USE CASE

Space-based connectivity and the digital mine

Mining in a connected world

Mining camp accommodation area,
Central Queensland Australia.



Spaced-based connectivity and the digital mine

Mining in a connected world

With the digital mine operators can dramatically improve quality of life for the men and women whose jobs demand they leave home, family and friends behind.

Better connectivity can also improve the welfare, skill level, and safety of workers living in remote locations. Having a reliable connection to the family and friends is essential in attracting workers to remote, harsh environments. It can help deliver key services such as training, telemedicine, and remote support. Further, by bringing the internet to remote locations, the mining operator can support the local population and help bridge the digital divide in underserved isolated communities.

Operators can optimise costs and improve operational performance with new high-speed data flows from remote locations, and low latency satellite communications that integrate with corporate systems. Low Earth orbit technology will support more IoT-based asset management, remote diagnostics, optimized use of equipment, and compliance with environmental and other regulations.

The connected mine can harness new benefits for security and safety, with applications such as collision avoidance, and autonomous operation. Predictive maintenance technology in critical areas will help to minimize costly downtime and failure.



Predictive Maintenance
Continually connected machinery allowing for potential issues to be identified and resolved remotely.

Connectivity challenges

Mining operations are increasingly digital and generate high volumes of data during day-to-day operations. This data will need to be accessed by both corporate applications and the cloud to make important real-time decisions. The men and women working in mines face long periods of separation from home and family.

The challenge is that mine operations are often located in remote locations, with poor access to terrestrial networks. Legacy satellite networks don't provide the speed or low latency required for rapid decision making, and their high cost makes them unsuitable for other applications such as staff welfare and quality of life.

Connectivity solutions

Low Earth Orbit (LEO) solves these issues with flexible, scalable, and cost-effective bandwidth options. Offering latencies of less than 70 milliseconds and downloads of 150 Mbps, even remote mining operations have greater access to key corporate applications, whilst workers will enjoy a more connected lifestyle in their leisure time, including video conferencing and cloud collaboration systems such as Microsoft Teams.

LEO connectivity can also be integrated into SD-WAN networks to provide a complete network solution for both remote sites and headquarters locations.

High speed and low latency enables cloud-based software so mining companies can centralise enterprise resource planning (ERP) across all sites. This will improve operations across the mine, including procurement, health and safety, resourcing, and accounting.

Head offices will be able to instantaneously draw up reporting variations if all systems are integrated.

Enhanced opportunities

Quality of life

By bringing high speed connectivity to mining communities, the industry can offer people living and working away from home for lengthy periods greater access to work and social communications to lift morale and improve welfare.

Operations

LEO networks open the way for a wider variety of applications such as autonomous operations, drone surveillance, and data analytics that save costs and mitigate risks. Locations will benefit from new data flows and specialist cloud-based software, such as for groundwater, tailing dam, or geophysical analysis.

Asset management

New sensor data and network capabilities across multiple sites will support continuous monitoring of fixed and mobile equipment for maintenance, safety, location, and utilisation.

Telemedicine

High speed, low latency, and low jitter networks with QoS can serve and improve medical care for people working in and around mining locations, providing better, faster diagnosis and treatment to people where they live and work.

Security onsite

Connectivity for new applications that protect operations and people.





Employee Welfare
More access to friends and families for personal wellbeing

Enhanced and new applications

Employee health and welfare

Improved access to internet for personal use, health, and medical care.

Community support

Support local communities with online learning and education facilities.

Optimized use of resources

Integrate corporate applications across the organization to improve operations.

Collaboration

Deploy video collaboration tools such as Microsoft Teams across remote sites.

Compliance with environmental and health and safety regulations

Monitor and analyse site and environmental conditions in real-time to identify any issues.

Asset management

Continuously monitor equipment for maintenance, safety, location, and utilisation.

Real-time data analytics

Improve results in exploration and production by analysing data in real-time.

Predictive maintenance

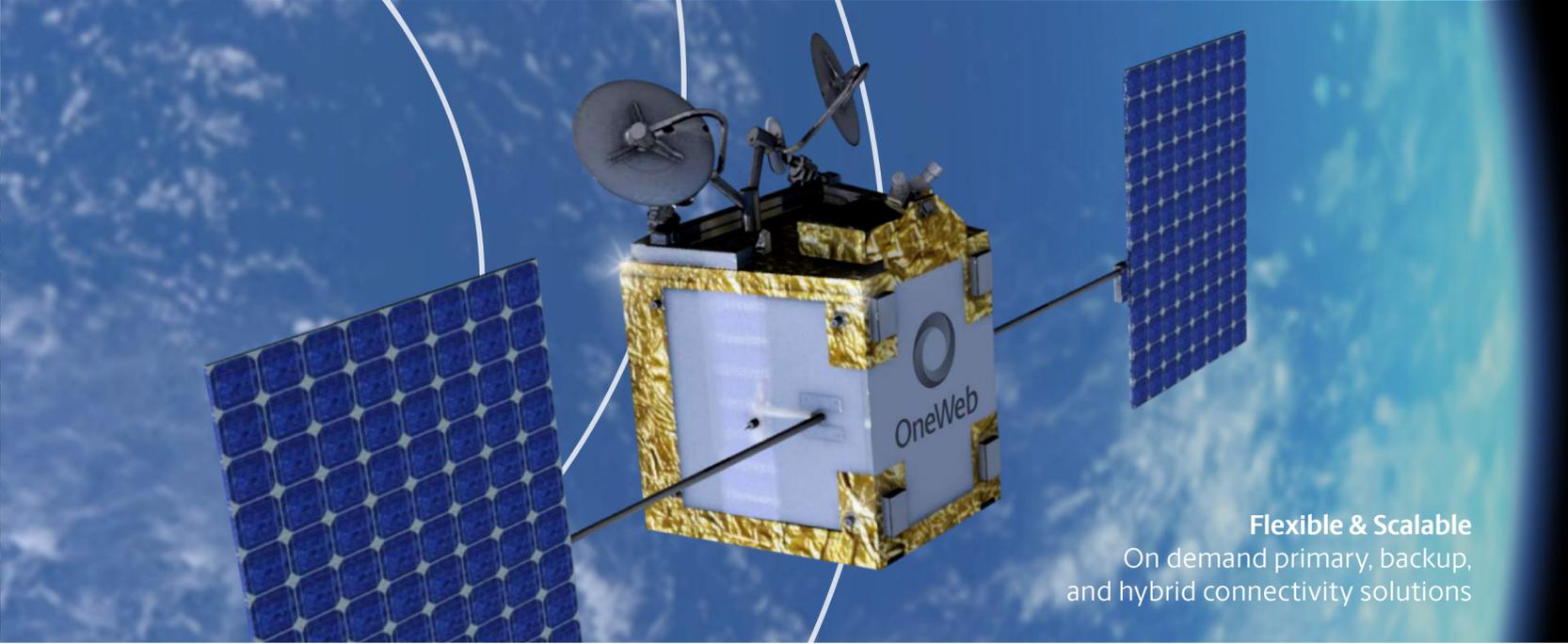
Identify failures in mining equipment before they happen and fix them remotely where possible.

Security

Video management systems for improved equipment and perimeter security.

Cloud-based mining software

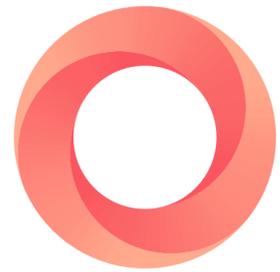
Cloud and IoT applications for new thinking in mechanisation and extraction.



Flexible & Scalable
On demand primary, backup,
and hybrid connectivity solutions

Global space-based connectivity made easy

OneWeb is powering the digital transformation of mining operations with flexible, scalable, and reliable connectivity plans that are designed to enhance existing communications solutions. Access OneWeb connectivity with a new class of user terminal that brings function, design, and space-based technology together in simple design. Easy to order, deliver, install, and maintain for primary, back-up, and hybrid network solutions that meet the demands of today's **digital mine**.



OneWeb

Global space-based connectivity

Connection everywhere changes everything

To find out more, connect with a [OneWeb Connectivity Consultant](#).
Register your interest oneweb.net/enterprise

OneWeb is a global space-based connectivity network, headquartered in London, enabling connectivity for governments, businesses, and communities. It is implementing a constellation of low Earth orbit satellites with a network of global gateway stations and a range of user terminals to provide an affordable, fast, high-bandwidth and low-latency communications service, connected to the IoT future and a pathway to 5G for everyone, everywhere.

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