

# Global Mining Industry

## Virtual Reality Training (VRT)

Health and safety are of paramount importance in the mining industry. In the 21st century mining companies require training to reduce injury rates, increase operational efficiency and reduce 'down time' through world class, cost effective methods.



360-degree theatre

### World-class training

QinetiQ continues to work with Coal Services to develop the world's most advanced 360-degree theatre for mine safety training. This 3D sensory theatre offers the ultimate in virtual reality – a fully immersive and interactive environment that provides all the sights and sounds of a real mine.

### A 3D immersive environment

The theatre provides controlled exposure to life-threatening scenarios such as fire, explosions and toxic atmospheres. Trainees can use miner's lamps to explore the 3D environment, feel the heat and see the smoke from a simulated explosion, and even extinguish a fire.

Harnessing the most advanced simulation technologies, the training fully complements classroom and practical training.



180-degree dome



120-degree theatre

### Benefits

Our pioneering training solutions offer many benefits that can include:

- increased health and safety
- reduced 'lost time' injury frequency rates
- increased operational efficiency
- increased production
- reduced litigation costs
- increased learning and retention rates
- reduced maintenance time

### A wide range of capabilities

The 360-degree theatre, which covers 13,000 square feet, can be customised for underground or open environments.

For smaller-scale requirements, QinetiQ offers:

- 180-degree domes – for up to three people
- 120-degree theatres for up to 30 people.

Individual training capabilities can also be designed to meet customer requirements. These can include:

- virtual/augmented reality hand-held mobiles and pads
- desktop simulations
- vehicle training simulators in an immersive 3D environment.

By using off-the-shelf hardware and gaming software, QinetiQ can deliver the most powerful, low-cost, technology agnostic, bespoke training available.

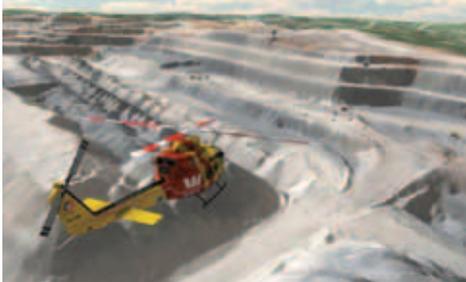
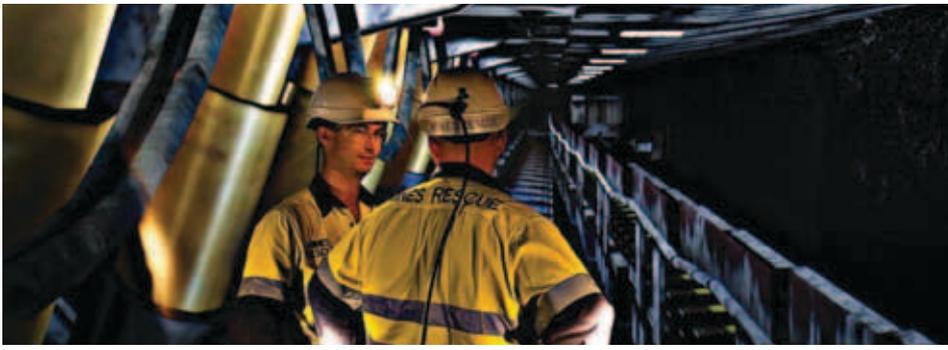


Image supplied by XPI Simulation Ltd

## Training requirements

QinetiQ and Coal Services can advise mining companies on how to meet their training goals in the most effective manner. This advice covers training needs analysis, software/hardware development, courseware training and contract support services.

Specific training course modules are also available on a wide range of subjects, such as:

- serviceability checks
- hazard awareness and indicators
- safe operations
- self rescue and mine rescue
- isolation management
- gas management
- equipment/transportation
- hazardous events and accidents

## Contact us

For further information or to discuss your requirements, please get in contact with us.

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## World-leading expertise

These groundbreaking training solutions draw on the combined expertise of QinetiQ and Coal Services. QinetiQ is at the forefront of advances in simulation training and software development while Coal Services is a world leader in mine safety training.



Images supplied by Coal Services Pty Limited

## Virtual reality training has played a role in reducing injury rates

The training solutions pioneered by Coal Services has played a leading role in reducing injury rates across the coal mining industry in New South Wales (NSW), Australia.

In the past five years, raw coal production across the state has increased by 25% and employee numbers have increased by 62%. Despite this growth, 'lost time' injury frequency rates have decreased by 43% during the same period.

VRT improves miners knowledge and skills and this unique training methodology has been acknowledged as a factor in reducing injury frequency rates.

Across the state of NSW in excess of 5000 people benefit from this training each year, with more than 20,000 virtual reality platform exercises. Other activities include mine supervisor training, contractor inductions and mine rescue competitions.

In 5 years (NSW)  
coal mining  
employee  
numbers  
increased

**+62%**

'Lost Time' injury  
rates decrease  
assisted by  
the introduction  
of VRT training

**-43%**

Source: Coal Services Pty Limited as at 30 June 2012

## State-of-the-art training attracts global interest

QinetiQ has delivered a 360-degree theatre to Rio Tinto – one of the world's leading mining companies. QinetiQ experts are also working closely with Rio Tinto to develop course modules and bespoke software.

