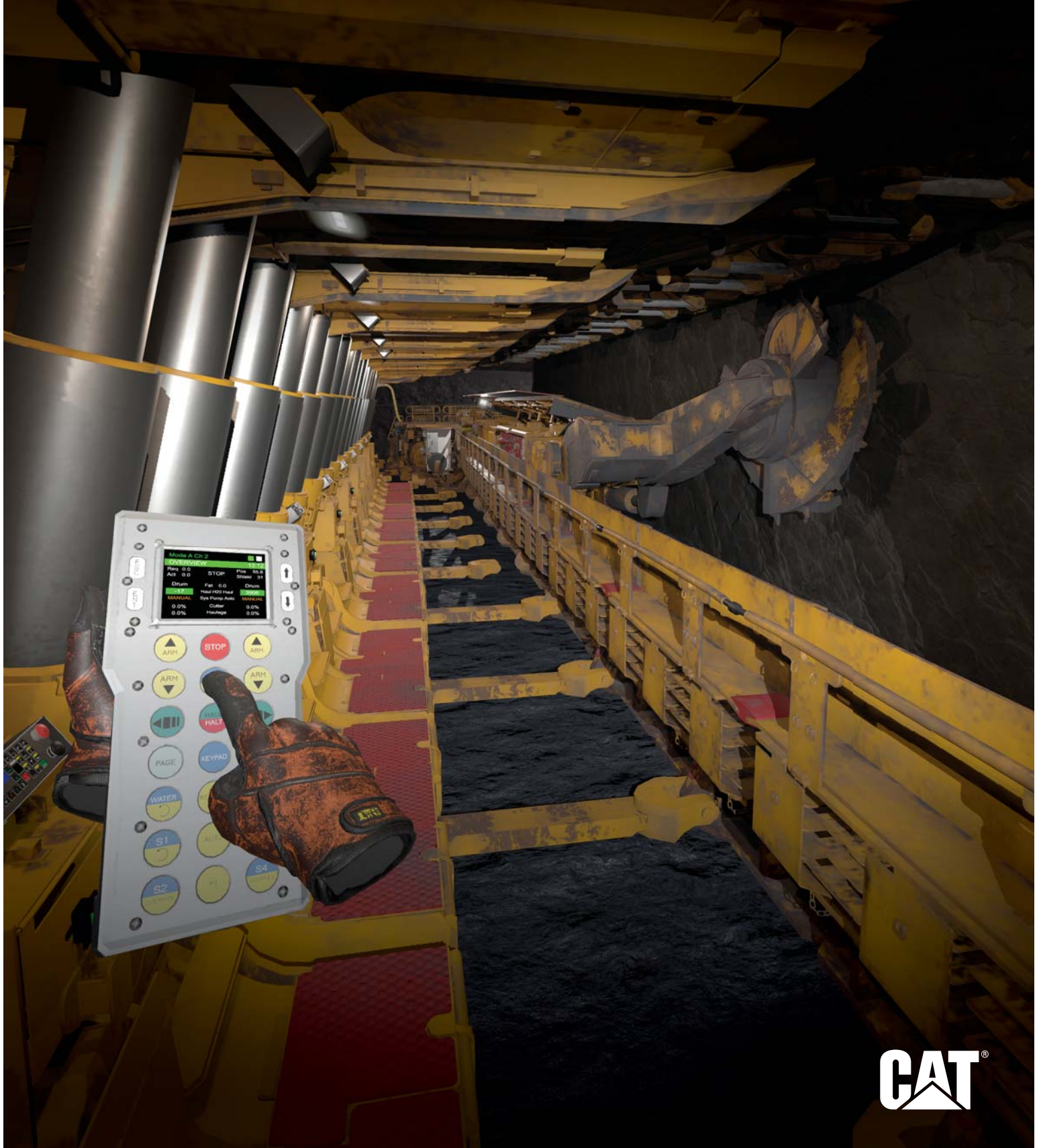


Virtual Reality Simulation

for Cat® Longwall Mining Systems

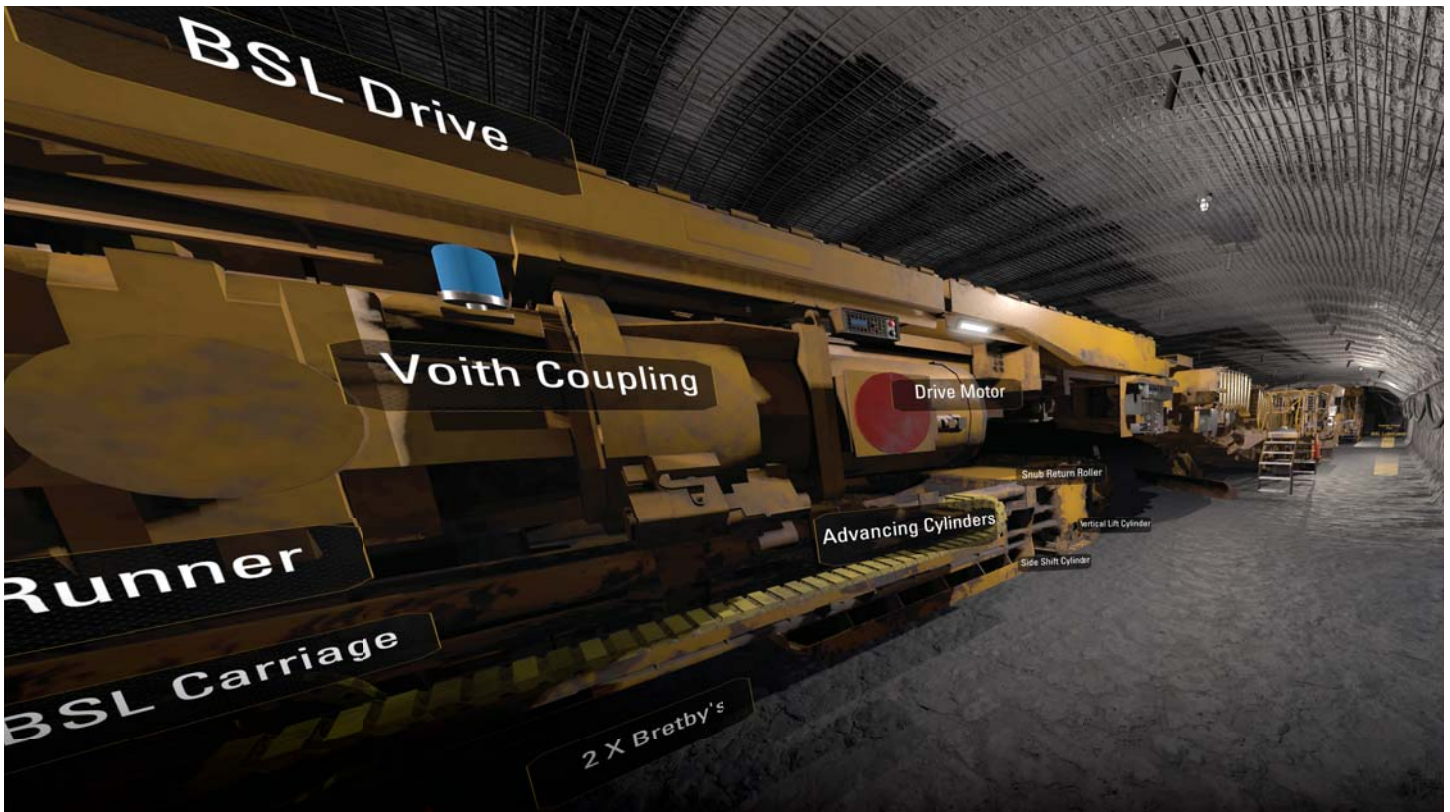


REAL OPERATIONS. PERSPECTIVES BEYOND REALITY. VALUABLE INSIGHTS.

As mining moves towards more efficient full automation and integrated remote controlled production, Caterpillar continues to develop new technologies to drive this new approach.



The Cat® Longwall VR Simulator is another cutting-edge piece of advanced technology from Caterpillar which is transforming mining operations.



THE POWER OF INTERACTIVE VIRTUAL REALITY VISUALIZATION: WHAT YOU SEE IS WHAT HAPPENS UNDERGROUND

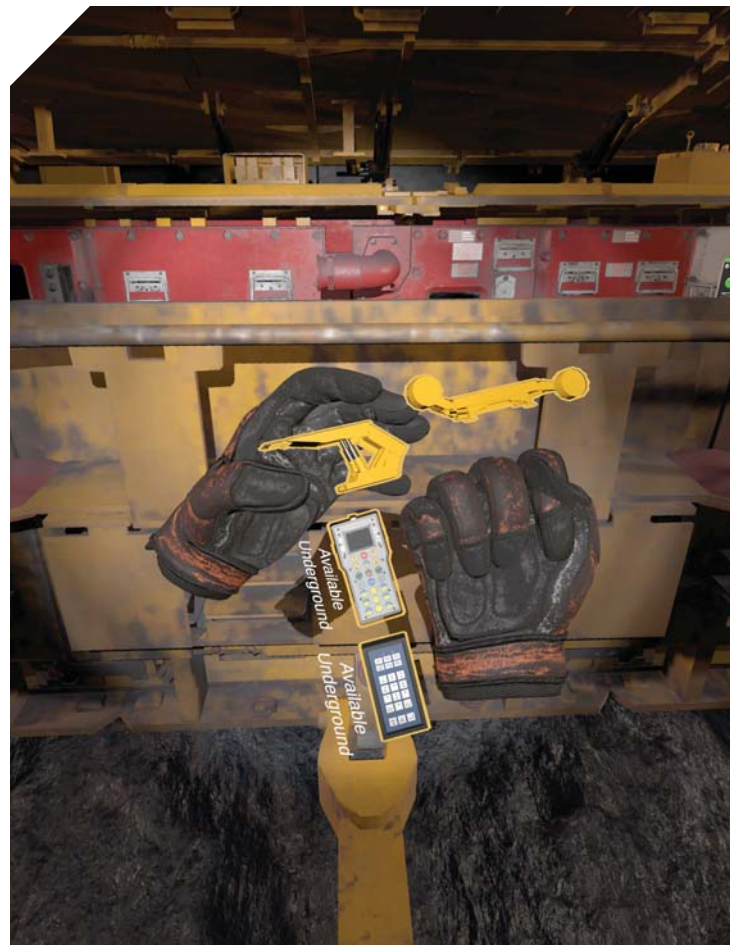
The **Cat Longwall VR Simulator** is the latest addition to the Caterpillar longwall training development of advanced longwall technology.

It provides virtual reality visualization of your specific longwall system including interactivity with an unprecedented level of graphical detail.

It reacts realistically to commands from operators in training.

Underground, poor visibility and the geometry of the longwall can make it difficult to get an overview and understanding. The **Cat Longwall VR Simulator** allows the longwall operation to be more clearly represented, understood and controlled, increasing productivity, reducing downtime and creating a safer operational environment.

It is also highly efficient for training; allowing new users to acquire operational skills in a realistic environment, with no impact on operations.



STRETCHING THE LIMITS OF YOUR EXPERIENCE

The **Cat Longwall VR Simulator** gives even the most experienced operators additional insights that improve their decisions.



VIEW THE LONGWALL EQUIPMENT FROM ANY ANGLE, EVEN IMPOSSIBLE ONES

Operators can instantly see almost any part of the operation virtually in a 3D view. Areas previously impossible or too dangerous to access in real life can now be clearly examined. Undulations and misalignments of the complete longwall are easily detected.



SEE THE BENEFITS OF VR SIMULATION

- + Faster, more accurate and informed decisions by operators
- + Reduce downtime with early detection of problem situations

The **Cat Longwall VR Simulator** can be used to train operators in controlling a full-size longwall. They may be acquainted with the components in general, their design and maintenance, from working with Cat VR Training Solutions.

Here the operator will learn how to operate the complex longwall operations.

They work in a safe, virtual, 3D environment that realistically simulates the equipment.

3D VR Training is fast and comprehensive, saving costs and improving overall productivity.

TRAINING APPLICATION

THERE ARE TWO TRAINING MODES:

SINGLE EQUIPMENT TRAINING MODES

The user focuses on and manipulates a single piece of equipment manually while the rest of the longwall is in a static state. He will quickly become familiar with its basic controls and operation.



COMPLETE LONGWALL OPERATION

Here, users control a more complex environment with the complete longwall configuration customized to match their mine site. They drive the entire mining operation in automation, simultaneously controlling shearer, AFC and roof supports with advanced batch commands.



TRAINING BENEFITS

- + Trainees gain a previously impossible level of practical knowledge without interfering with productivity
- + Progress of trainees can be tracked and any weaknesses in operational decisions can be isolated and dealt with before they happen in actual operation
- + Minimal loss of production time – trainees are proficient and comfortable with the equipment and processes even before entering the mine
- + Reduced damage to expensive equipment due to trainees' familiarity with its operation
- + Interesting and engaging way of learning which motivates trainees

CAT LONGWALL 3D VIRTUAL REALITY SIMULATOR

THE BIG PICTURE — WHEREVER YOU ARE



The mining industry has already recognized the value and efficiency of automation and the remote control of operations. Interactive virtual reality simulations of operations are unquestionably more efficient and user-friendly methods to drive complex mechanical processes.

The Cat Longwall VR Simulator is at the forefront of this new dimension in mining operations and Caterpillar will continue to develop cutting edge Virtual Reality service solutions for its customers.

3D SIMULATION FEATURES

Displays all the functionalities and details of the main VR simulation. Live data is optimized to run smoothly on these devices. They are operated intuitively by touch controls.

This 3D visualization allows mobility and control. Mine managers can monitor and control operations outside the mine environment.

For more complete information on Cat products, dealer services and industry solutions, visit us on the web at www.cat.com

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