

Dragline Simulator launches onto world stage with strong support

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For Immediate Release

A major breakthrough in the development of Advanced Equipment (AE) Simulator technology could help coal miners overcome a significant barrier to rapid expansion of Australia's export coal mines.

New generation ground/tool simulation technology incorporated in the state-of-the-art Dragline Simulator Conversion Kit allows complex operating processes and digging tool/ground interactions to be realistically simulated for the first time.

Developed by the world's leading supplier of mining AE Simulator technology, Immersive Technologies, the dragline simulator is expected to help alleviate the "skills constraint" on production growth and productivity improvement sought by coal producers during a period of booming demand for exports.

Described by a BHP Billiton executive at a recent national training conference as possibly the worst period of skills shortages in the history of Australian mining, the current lack of experienced mining machine operators extends to dragline operators.

According to Anglo Coal Australia (ACA), which partly funded development of the Dragline Simulator, the shortage of skilled dragline operators is acute in Queensland's Bowen Basin, which has the largest operating dragline fleet of any single coal producing region in the world.

ACA runs a fleet of seven draglines in central Queensland, including two units at the Callide mine south-west of Gladstone, where the first Immersive Technologies Dragline Simulator will be used to train new operators, test prospective operators and in coaching of more experienced drivers of the massive earthmoving units.

The primary overburden removal tool at many of central Queensland's 40 or so large openpit coal mines, draglines shift more than a billion cubic metres of waste material in the region every year.

Skilled, competent operators are vital not only to the efficient and productive use of the \$100 million machines, but also in minimising equipment and component damage, unscheduled downtime, and safety risks.

Virtual**Ground** Technology™ from Immersive Technologies, which makes possible real-time, high-fidelity simulation of complex soil/tool interactions and behaviours, has made the holy grail of mining machine simulation a reality, according to ACA chief mining engineer, Warren Seib.

"In the past one of the hardest things for a software engineer to model has been the interaction of broken dirt and excavating tools," he said. "It's been a challenge for 15-20 years around the mining industry.

"The swinging and dumping can be modelled, but modelling the actual digging process – so that it's realistic – has always been a challenge.

"It (dragline) is probably the most complex earthmoving equipment to be simulated."

Matthew Little, senior mining engineer at Callide, said ACA's successful use of Immersive Technologies AE Simulators for dump truck, excavator, loader and dozer operator training, and positive results from limited exposure of trainees to basic mechanical scale models, had created high expectations of the Dragline Simulator.

He believes the Simulator can halve the typical training time of up to six months for new operators, and simultaneously cut the amount of production normally lost during the training period by at least 50%.

“We looked at it in terms of increasing the new operator’s productivity much sooner,” Little said.

“You only have to get a minor increase in the operating rate of a new operator to make the simulator worthwhile.

“The next improvement stage, where we’ve already seen advances from simulator training with trucks and so forth, is taking your less experienced operators and upskilling them.

“Initially you’re trying to teach new operators co-ordination and what does what, then you can teach correct technique. It would be of significant benefit if better technique saved you a couple of percent in maintenance costs related to the bucket, if not the dragline itself.

“The bucket is where you collect most of the damage that’s operator related. There is a significant potential payoff in terms of increased bucket life, reduced rebuilds, etc.”

Immersive Technologies business development manager, Oye Obe, said the company’s Virtual**Ground** Technology™ was the result of more than seven years of research and engineering work and represented a “quantum leap beyond existing ground/tool simulation technologies in the earthmoving industry”.

“Accurate modelling of all the forces affecting digging tools using Virtual**Ground** Technology™ results in a much more realistic reaction motion of the earthmoving machinery,” Obe said.

“With Virtual**Ground** Technology™ at the core, Immersive Technologies simulation products are the closest thing to the experience of shoveling and excavating.”

Immersive Technologies has reported strong interest from coal miners in Australia and elsewhere in the Dragline Simulator. The company recently opened an office in Brisbane to extend support for its growing Simulator population in eastern Australia.

About Immersive Technologies

Established in 1993, Immersive Technologies is the leading global provider of operator training Simulators to the mining and earthmoving industries. With more than 65 AE Simulators deployed in 14 countries around the world, the company’s simulators are integral to the operations of many world-leading mining companies who use the technology to improve operational safety and efficiency while driving down maintenance costs.

Immersive Technologies’ strategic alliances with many leading original equipment manufacturers (OEMs) ensures its extensive range of AE Simulator Conversion Kits achieve a superior level of realism and accuracy through the use of exclusively licensed proprietary data and machine technical information from the OEM.

The company’s expanding customer support base includes offices in Australia and the USA. For more information about Immersive Technologies, visit www.ImmersiveTechnologies.com