

3D visualisation; it's a case of when, not if

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THE use of 3D visualisation is set to drastically change the way resources companies do business, and it's a matter of when, not if, the technology is adopted.

Platforms to facilitate 3D visualisation have been around for a long time, but it's only now that new technology, specifically from the gaming sector, is opening more doors for industry. It's now cheaper, easier and faster to create interactive 3D environments which are sophisticated and of high visual quality.

Alongside the rise of improved technology, the economic environment has also played a large part in the increased adoption of 3D visualisation in the resources sector. When companies were making significant profit margins there was no pressing need to adopt innovative technology to increase that margin. The story is significantly different now as mining companies in particular are looking at new ways to do more with what they have. Consequently, the use of 3D interactive environments appears to be on the rise. It is when these independent projects combine to create a company-wide cohesive 3D environment that the ultimate value is recognised.

Mining companies are the perfect operators to get the most value out of 3D visualisation; environments which are data-rich, high risk, and spread across diverse locations can best benefit from the technology and the simulation of shutdowns is a perfect example.

Traditionally shutdown events have been managed using detailed documents outlining the required tasks. Internal stakeholders have to interpret the documents to understand what the physical processes for each task will involve. The same goes for contractors who may be pricing the job and safety staff whose job it may be to identify hazards.

How much easier would it be if these teams were able to use a visual 3D simulation to demonstrate exactly how each task in the shutdown is performed? The answer, invariably, is that it would not only be easier, but it would also be safer, faster and cheaper in the long run. Cheaper



because teams are able to communicate and interact with the simulation during the process and input knowledge of how the shutdown played out. That knowledge is retained within the simulation, reducing the reliance on using the same team and contractors for future shutdowns.

Contractors using 3D simulations for shutdowns are able to get a better sense of the shutdown and provide more accurate quotes. From a safety perspective having an interactive 3D simulation means a clear understanding of the hazards.

The fact is that humans are wired to leverage our ability of sight; it is much easier for us to comprehend complex interactions when they are demonstrated through the use of 3D. While some people have the ability to understand interactions from words on a page, it is not a common skill. Using text to communicate an



interaction also leaves a lot to subjective interpretation. Interpreting visual images is a much more natural process and, thus, happens a lot faster and often with more intimate understanding.

Aside from using 3D visualisation for more effective communication, it is also proving to be highly effective in the training realm. Major miners have been implementing interactive 3D training environments to assess and train workers in high risk scenarios – removing them from the real life environment, thus reducing both risk and cost.

An excellent example of this is in the high-voltage switching area where employees can perform switching tasks in a 3D virtual environment which is an exact replica of a real life switch room. Being able to use this virtual environment for training to ensure they are able to carry out tasks

is a significant benefit to companies both from a safety and cost point of view.

This technique has also come into play to assess whether employees need additional training. For example, interactive virtual environments can be used to determine whether personnel need to attend a refresher course or further training. This is a significant shift from the way training was traditionally done with all staff sent on refresher or further training courses.

All of these different uses of 3D visualisation are, on their own, having a great impact on the way mining companies operate both from a cost and safety point of view. But the future lies in creating a single interactive virtual environment of the operation where better training, visualisation and simulation of tasks can result in a better, safer and more engaged workforce.

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