

Orica to take the reins on Integrated Extraction Simulator (IES) digital technology

“Optimisation of processing operations by use of IES will also enable step-change reductions in power and water consumption, while greatly improving recoveries of marginal ores, all contributing to the future sustainability of mining operations.”

An Australian-developed simulation software platform for improving the efficiency of mineral processing operations is set to take on the world.

Developed by the Brisbane-based Cooperative Research Centre for Optimising Resource Extraction (CRC ORE), Integrated Extraction Simulator (IES) is a cloud-based software platform designed to reduce the use of energy and water in mining through the application of simulation, optimisation and machine learning.

Following a competitive selection process, Australian headquartered global mining explosives and services giant Orica has been selected as the commercialisation partner for the Simulator, and will take the reins of the platform’s growth strategy from July 2021, with plans for global expansion of the technology.

Orica’s interest was initially driven by IES’s introduction of blast simulation into the mineral processing value chain. While mine operators can use controlled blasting techniques as an effective augmentation of the rock breakage process, Orica also saw the wider application of IES as an obvious fit with its expanding digital solutions offer across the whole mining value chain.

By harnessing the virtually limitless scalability available through cloud computing services, mining companies can now use IES to configure multiple design options for a mineral processing plant. IES then tasks each design and simulates its performance for every day of operation over the life of a mine. This high-resolution simulation of each design leaves no stone unturned in the pursuit of optimal mineral processing.

Orica intends to expand this capability into a global solution for mining companies, enabling them to design their mineral processing using IES, and then leverage IES’s capability every day to drive continual operational improvements.

CRC ORE Chief Executive Officer Dr Ben Adair said having a company the calibre of Orica as commercialisation partner is testament to the enormous opportunity and benefits that the simulator provides to the mining industry.

“We have worked with our Participants over many years to refine our simulation platform,” Dr Adair said.

“As a foundation Participant in CRC ORE, Orica shares our commitment to optimising resource extraction and our passion for the continued development of the simulator.

“The scale offered by Orica’s global reach, in addition to its sustained investment in research and development and unwavering focus on innovation makes it the ideal custodian of IES.”

Known for its market-leading explosive and blasting systems, Orica has been evolving towards its vision of an integrated ore extraction mining services company. This vision includes investing in digital solutions where continuous innovation and open integration with other industry systems across the mining value chain are key to the delivery of whole of mine optimisation for customers.

Orica Chief Commercial and Technology Officer Angus Melbourne said Orica is primed to take the simulator global and continually evolve the technology to meet the ever changing needs of the industry.

“This is a great example of industry collaboration developing solutions to industry level problems, and we are extremely proud to be part of it.

“It is a fantastic opportunity to continue Orica’s 11-year relationship with CRC ORE and further expand our digital solutions offering by combining our blasting domain expertise with this leading simulation technology to customers and beyond worldwide.”

Orica Vice President Digital Solutions Rajkumar Mathiravedu said: “From a technology perspective, we see enormous synergies with our existing blasting and measurement solutions, including BlastIQ, FRAGTrack and ORETrack. We are also excited to integrate our automated, data science enabled blast design technology and solutions with IES, offering end-to-end digitised workflow solutions from orebody knowledge through to mineral processing in an open, secure, and connected platform.”

CRC ORE’s team of world-class developers and consultant engineers will integrate into Orica from July of 2021 and will continue to be led by CRC ORE’s current General Manager for the simulator Nick Beaton.

“CRC ORE has developed a simulation platform that can take mathematical models of mineral processing equipment from anywhere in the world. We fuse physics models, machine learning models and artificial neural network models into one integrated system. It is like we have built the mining industry’s smartphone and it can run any number of mineral processing apps,” Mr Beaton said.

“We have been able to achieve this enormous progress through cooperation with our mining company members and a dedicated team of industry research partners around the world. IES is now at the right point in its development to become commercially sustainable while continuing to develop new capabilities. It will be thrilling to continue this with Orica.”

“We have demonstrated that the simulator can improve the value of major mine sites by some five to six per cent, this is significant for the mines using the simulator and for the whole industry.”

“Optimisation of processing operations by use of IES will also enable step-change reductions in power and water consumption, while greatly improving recoveries of marginal ores, all contributing to the future sustainability of mining operations.”

The transition of the IES business to Orica will take place in the middle of 2021 when CRC ORE’s term comes to an end. In the meantime, CRC ORE and Orica, together with industry partners will continue developing innovations to drive continual improvements throughout the mining industry. Continuing this innovation, Orica looks forward to IES participation in the next iteration of the Amira P9 project.

More information on the Integrated Extraction Simulator can be found at crcore.org.au/IES.

ENDS



The Integrated Extraction Simulator is a cloud-based software platform designed to reduce the use of energy and water in mining through the application of simulation, optimisation and machine learning.

MEDIA CONTACTS:

CRC ORE - Steven Henderson, Communications Manager, +61 401 542 895 s.henderson@crcore.org.au

Orica - Andrew Valler, Senior Manager, Global Marketing Communications, +61 437 829 211 andrew.valler@orica.com

ABOUT ORICA:

Orica is the world’s largest provider of commercial explosives and innovative blasting systems to the mining, quarrying, oil and gas and construction markets, a leading supplier of sodium cyanide for gold extraction, and a specialist provider of ground support services in mining and tunnelling. orica.com

ABOUT CRC ORE:

CRC ORE is a cooperative research centre focused on Optimising Resource Extraction. It is delivering value to Australia by improving mine productivity, commercial return, and environmental outcomes. CRC ORE does this by enabling mining operations to reduce the amount of waste they process and identify increases in overall value, while operators can decrease their use of energy and water. Established in 2010, CRC ORE has made significant progress in rapidly developing and integrating technology from concept to implementation. CRC ORE uses innovative methodologies to develop new technology, or repurpose existing technology, often from outside the mining industry, to significantly reduce the time from prototype to production scale application. crcore.org.au