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Austmine

What is Austmine?

Austmine is the Australian mining industry export association comprising companies dedicated to supplying the very best in innovative, cost efficient and practical technologies as well as services to mining operations worldwide.

Austmine membership

Organisations interested in finding out more about what the Austmine membership has to offer are invited to contact the Austmine Executive Officer, **Robert Trzebski** at:

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Austmine members win national export awards



Photo courtesy of the Australian Export Awards

Fast growing Queensland company Russell Mineral Equipment, leading software developer Micromine and specialist pump maker Sykes Group were the Austmine members recognised at the 2008 Australian Export Awards announced in Melbourne in December.

The minister for trade Simon Crean and guest of honour, prime minister Kevin Rudd presented Russell Mineral Equipment (RME) with the Caterpillar/Australian Made Large Advanced Manufacturer Award, a category in which Sykes was also recognised. Micromine was a national finalist in the Information and Communication Technology category.

A mining industry technology company, RME's key achievement has been the development of a globally recognised suite of grinding mill relining technologies which have revolutionised plant efficiencies at hard-rock, metalliferous mines around the world. The company claims to have achieved 80% market penetration in the niche and, according to founder and managing director John Russell, continues to identify new technology solutions for other problems in mineral processing industries.

"This [award] reflects RME's innovative culture, world class products, commitment to quality, and recognition by our international market as being the premier supplier of grinding mill technologies and services," Russell said.

"There are many unidentified and unmet needs in the mining industry sector," Russell said. "In

developing our Mill Relining Machine, our focus was on the process of replacing wear parts within grinding mills. We wanted to make it quicker and safer, and to improve overall plant availability."

Sykes Group, a Cardiff based manufacturer of auto prime dewatering pumps, won the Large Advanced Manufacturer Award at the 2008 Premier's NSW Export Awards, earning its place in the national award nominations.

"We are proud to be a Hunter [region] business, assisting to create jobs and economic growth in our fast growing region," said Sykes managing director Jon Collins.

"Sykes Group was recognised ... from a strong field of competitors and I believe this is testament to our engineering team who continue to provide our customers with cutting edge pump technologies, keeping Sykes at the forefront of our market and our factory who manufactures our products to the highest quality. Sykes has a strong team of people working for the organisation who are passionate about finding dewatering solutions to meet our customers' needs and we plan to continue this well into the future."

Micromine has offices in 12 countries and operates in 70. The company meets the challenge of ongoing change in the mining industry by investing heavily in research and development.

"We have consistently maintained that investment at about 30% of annual revenue," said managing director Graeme Tuder.

"Our products are recognised as being vital drivers of productivity, safety and transparency across the whole mine development and production cycle, which is a long way from where we started as a small exploration software firm more than 20 years ago."

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Thiess exports training expertise

Leading Australian mining contractor Thiess has built an impressive operating track record in Indonesia over two decades during which it has successfully exported the best in Australian mining expertise and technology. But another significant legacy is resulting from a landmark transfer of world's best standard maintenance and operator training methods.

Thiess, currently working at the Satui, Senakin, Sangatta and Melak coal mines, and providing PT INCO with construction and support services, has about 6800 employees in Indonesia. Some time ago it recognised the need for more skilled labour to ensure contract works were carried out to the standards the company's reputation was built on in Australia and elsewhere.



“Given the difficulty of finding the number of skilled labourers to deliver a project in the time frame required we realised there was a big gap in what was qualifying from the Indonesian technical schools,” said PT Thiess Contractors Indonesia president director, Roy Olsen.

“We decided to establish our own program, based on the apprenticeship scheme we had successfully working in our Queensland business.”

Thiess Indonesia last year won an award for the Best Apprenticeship Program implementation in Indonesia, presented by the Indonesian Manpower and Transmigration Department during the country's National Apprenticeship Program Workshop in Balikpapan.

Indonesia directorate general of training and productivity, Yunan Ginting said the award was

testament to Thiess Indonesia's commitment to training and developing its people.

There are currently more than 400 apprentices enrolled in the program, which aims to qualify local mechanical, electrical and welding tradespeople to Australian TAFE diploma standards over four years. Thiess continues to work closely with Australian institutions to ensure the trades are fully qualified to Australian standards.

To date there have been 233 graduates and Thiess has 200 of them working at various sites and offices.

“Retention has been excellent and I think a result of the investment and commitment we make in these young men and women,” Olsen said.

There are currently 444 apprentices still in the program. Annual intake varies and while it has typically been about 70 trainees a year, 85 new apprentices were recruited early last year and the total has been rising the past four years.

“Thiess Indonesia over the past 20 years has had a reputation built on exceptional delivery and technology,” Olsen said.

“Our reputation of being able to handle the most difficult of sites was based on our ability to transfer the learning's and experience from Australia up to Indonesia. This benchmark has been one that other contractors in Indonesia have focused.

“As well as the recognition by the Indonesian Government, Thiess Indonesia last year received the Thiess Chairman's Award for outstanding health and safety performance. The business achieved over 55 million man hours lost time injury free, which was a significant achievement given the number of operators and complexity of the works undertaken over the two-year period. This is also a testament to our attention and focus on health and safety training not only with the apprentices and operators but all employees across our business.”

Thiess Indonesia is also using the most advanced training technology and methods available to ensure its mining equipment operators work safely and productively. Its commitment to operator training has included an investment in sophisticated simulator technology developed in Australia by Immersive Technologies.

“We have two simulators and they are supported by a mobile training team,” Olsen said.

“The simulators were the first in Thiess Group and were established here first. Given the local labour laws that often come with Mining Works Contracts we found them an essential part of ensuring we could maintain operational standards on site while providing the local communities with improved income opportunities.”

The simulators help Thiess Indonesia to familiarise and train inexperienced operators before they jump onboard real machines, upgrade operator skill levels, and conduct “corrective action”

training to address operational errors.

The training doesn't stop with simulators but extends to health and safety training, and general education sessions run in wet weather and other downtimes.

“We also have a Performance Improvement Team (PIT) program through which we basically provide coaching to truck and digger operators and their lead hands. The main goal of this and the other equipment operation programs is to have a safe and efficient operation of equipment which enable improved productivity and production in a safe manner,” Olsen said.

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Real-time monitoring now a reality

A new high-tech 'listening' device that can be used to help improve the performance of coal plants may have far wider application in the mining industry, according to the principal research scientist at CSIRO Minerals Lucas Heights Science and Technology Centre in New South Wales, Dr Steven Spencer.

The monitoring system uses sensors on the outer shell of dense medium cyclones (DMC) in coal handling and preparation plants to measure high frequency vibrations produced during operations – essentially listening to gauge what is happening inside. This provides information on process stability, alerting operators to problems such as too many solids being forced through



the vortex finder that discharges washed coal or through the spigot that discharges waste.

The sensors detect surging, discharge and feed blockages, the formation of clay balls due to 'sticky' feed, and imbalances in the amount of feed entering parallel DMCs. The monitoring system also indicates the

product-to-reject (coal-to-rock waste) ratio being obtained from the feedstock processed, providing an online indicator of yield.

Dr Spencer said the online acoustic emission (AE) monitoring and alarm system had been developed to the point where it was ready for commercial use. A prototype system trialled at a coal plant in Australia had demonstrated the robustness of the technology and its effectiveness as a real-time detection and advisory alarm for DMC overload and surging, and in detection of DMC yield variation with coal feed type, specific gravity of the feed dense medium and solids feed rate.

This indicated it could become a valuable tool for fine-tuning operations to improve throughput, yield and product quality.

The prototype was developed with support from the Australian Coal Association Research Program.

Dr Spencer said this was the first time such a system has been applied to DMCs in an operating plant and the concept was drawing a positive reaction within the industry.

Although it was developed primarily for coal industry DMCs, there was potential for much broader application including use on various slurry-flow or rock-breaking devices throughout the resources sector.

“The monitoring system is applicable to stationary shell mineral processing devices including separation and comminution units that involve slurry flows that naturally generate acoustic emissions,” Dr Spencer said.

“The acoustic emissions can be generated by solids impact or abrasion on unit operation walls or by the slurry flow itself, gas bubble formation, transport or collapse.

“There have also been tests of acoustic emission monitoring of process state on other devices such as fine grinding mills, flotation cells, hydrocyclones and autogenous grinding and semi-autogenous grinding mills. In all cases features of the AE have been found to be indicative of process performance.”

Dr Spencer said the commercial prototype monitoring system had been in development for the past 18 months.

“Proof-of-concept experiments have been performed over the last five years or so,” he said.

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Positive reaction to Gekko recoveries

The Australian technology leader in heavy mineral gravity separation and gold and silver intensive leach

plants, Gekko Systems, will supply a further five InLine Leach Reactors (ILRs) to Hothschild Mining for its majority-owned San José project in Santa Cruz province, Argentina



The order comprises Gekko Systems’ innovative ILRs, purpose-designed silver electrowinning cells, and associated equipment.

Minera Santa Cruz, 51%-owned by Hothschild Mining plc and 49% by Minera Andes SA, started gold and silver mining operations at San José in 2007. Hothschild also uses Gekko Systems’ ILRs at its Selene silver and gold mine in Peru, where Gekko also installed a direct electrowinning system for the recovery of silver and gold.

Current processing plant capacity at San José is 265,000 tonnes per annum. Minera Santa Cruz recently advised of its intention to double capacity during 2008. The order for five Gekko Systems’ ILRs will supplement the expansion.

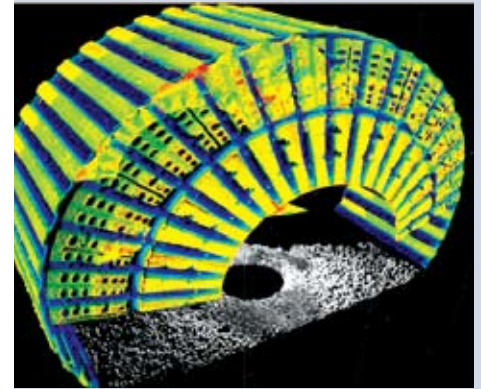
Gekko Systems’ technological and design ingenuity combined with Hothschild’s gold and silver mining expertise has produced high recovery rates from flotation concentrates. The San José joint venture set ILR target recovery rates for gold at 96% and target recovery rates for silver at 97%. Gold and silver recovery rates at San José are now consistently meeting target expectations. Since opening in 2007, ILR recovery rates for the Selene mine have achieved 98% for both silver and gold.

“Extracting silver from flotation concentrates at such high recovery rates, and therefore being able to produce silver dore on site, provides mining companies with considerable market advantage,” said Gekko Systems technical director Sandy Gray.

“Traditionally, silver concentrates are sold to smelters. Producers are therefore exposed to fluctuations in international market prices for silver; to smelter processing timetables over which they have little control; and to payment schemes determined by end-of-smelter processing schedules.

“ILRs can eliminate these problems by returning on-site control of production processes to mining companies such as Minera Santa Cruz.”

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Millmapper gets Climate Ready funding

Western Australian company Scanalyse will invest up to \$3.5 million – including \$1.75 million awarded through the Federal Government’s Climate Ready program – to develop ways to improve the operation of vital mine processing plants and reduce greenhouse gas emissions.

The Climate Ready research project will focus on using data produced by Scanalyse’s MillMapper technology to optimise the performance of grinding mills, which generally work at low efficiency levels but consume about 60% of the energy used in mining. Energy use in rock comminution (crushing and grinding) has been estimated to consume 3% of the world’s electricity.

Scanalyse CEO Peter Clarke said MillMapper captured a snapshot of the internal condition of grinding mills using a 3D laser scanner. The information is used to improve condition monitoring, measuring wear rates and improving maintenance procedures on semi-autogenous grinding (SAG) and ball mills.

The Climate Ready program is part of the Australian Government’s Clean Business Australia initiative – a \$75 million partnership, over four years, between the Government and industry to deliver energy and water-efficient projects with a focus on productivity and innovation. Climate Ready offers dollar-for-dollar support through grants of \$50,000 to \$5 million.

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Latin America focus for MTS Cluster



A funding boost from the Federal Government will allow Austmine to intensify its efforts to connect the leading edge technologies and service capabilities of Australian mining suppliers with some of South America's major mines and new resources projects.

Austmine has been confirmed as the leader of the Mining Technology and Services Cluster, one of several receiving support through Austrade's Global Opportunities Program. The program, announced earlier this

year by Australian minister for trade Simon Crean, is designed to help eight industry clusters of Australian companies expand their international business activities.

"By working with these industry clusters, Austrade will be helping over 100 companies to pursue international opportunities which will assist them to maintain and grow their businesses, even in these challenging economic times," Crean said.

Austmine Executive Officer Robert Trzebski said the MTS Cluster would focus on capturing opportunities in selected markets in Latin America, initially building on Austmine's initiatives of recent years to increase access for Australian companies in key markets such as Chile, Brazil, Mexico, Peru and Colombia.

Austmine last year led a mission of Australian MTS companies to Brazil and Chile.

"The Austmine board has decided to tackle two markets, Peru and Colombia, with the EXTEMIN 2009 mining expo at Arequipa, Peru, from September 14-18 the initial focus," Trzebski said. "It is one of the most comprehensive mining-related exhibitions in Latin America.

"A similar mission to Colombia is planned for early next year."

The aim in both instances will be to comprehensively promote and join the capabilities of MTS Cluster members with

specific needs of significant, long-life mines and projects in the target markets, a process which has brought considerable success to both participating parties – suppliers and mine/project owners – in the past.

"As part of this approach we will be thoroughly researching the requirements of these significant projects in advance of our mission, and familiarising relevant personnel on both the supplier and buyer sides with the aims of the program and potential benefits," Trzebski said.

"That process is now likely to include, with this additional funding support, bringing key personnel from the target Latin American companies to Australia prior to the missions for a series of presentations and seminars with MTS Cluster companies.

"In the lead up to ExteMin it is our intention to visit mines as we did in Brazil last year to meet with procurement teams and technical personnel, operational heads, and so forth, so that cluster members meet the relevant people."

Trzebski said the Colombia focus at this stage embraced major coal and nickel operations, with a program likely to culminate in a mining expo stand and tour in March, 2010.

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Timing change for top mining technology event

Budget cuts by mining companies worldwide have forced Austmine to delay the organisation's third international conference and exhibition,

Austmine 2009, originally scheduled to run from March 30-31 at the Adelaide Convention Centre in South Australia.

The event will now be staged later this year or early in 2010.

Previous conferences in Queensland and Western Australia drew hundreds of delegates including high-level international groups from South America, India, China, Africa and other parts of the world. But in the midst of major industry retrenchment announcements, project deferrals and spending cuts, Austmine has received confirmation that a number of overseas mining company delegations and speakers can't get to Adelaide at the end of March.

The Austmine International Conference and Exhibition was conceived with the aim of bringing together these international

mining leaders and representatives of Australia's multi-billion-dollar MTS sector.

"Our members are committed to the event, and the board of Austmine remains committed to holding the conference and expo in Adelaide," said Austmine chairman Alan Broome.

"However, at this time the rapid changes in the global mining industry have made things too fluid. The schedule of key international speakers is unsettled, and travel by big foreign mining organisations has been cancelled."

Broome said the major mining technology forum would be rescheduled so that it was better aligned with global mining conditions and the prospects of economic recovery.

"The recovery will coincide with the emergence of the technology age of mining," he said.

"Australia is recognised as being at the forefront of this new technologically driven phase of development and growth."

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New Members

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