

Advanced remote monitoring systems to reduce mine operation costs

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In a world of low commodity prices, miners must look wherever they can for potential savings. Remote operations monitoring may aid Australian mining firms, where vast distances must be travelled for workers intending to operate remote mines.

Software company IPACS Australia Pty Ltd has opened a new remote monitoring operations centre in Adelaide, Australia, which utilises wireless sensors to transfer and collect data from mine sites in real time.

Designed and manufactured in South Australia, the sensors are currently relaying data 650km from IPACS' operations centre, according to Vinay Sriram, the general manager of IPACS.

Kailash Sriram, the managing director of the company, told reporters assembled at the centre's opening ceremony that: "Mining service operators can deploy sensors across essential operational equipment in their mines and oil fields thousands of kilometres away, stream that data back to this operations centre, where it is plugged into diagnostic models that use smart mathematics [including] algorithms and predictive analytics."

"Currently we have assets valued at over A\$10m (\$7.1m*) under remote tracking and recording," Vinay Sriram said. "We are hopeful to increase our assets under management to A\$100m within the next three years with the new technology."

In addition to the assets being managed 650km away from the technology centre, IPACS is also monitoring dump trucks working at the Prominent Hill copper, silver and gold mine in South Australia mine and a crushing machine, 400km from its base.

"Our focus is on reducing maintenance costs, increasing asset reliability and efficiency, identifying faults and increasing productivity," IPACS' Sriram said.

"Remote operators can then readily assess equipment performance and schedule repairs or maintenance only when required, reducing operating costs, maintaining or increasing production, and, vitally, averting costly production shutdowns," Kailash Sriram added.

Derisking technology

"In an economic environment of sharply lower commodity prices, it is vital that South Australian businesses embrace technological innovations that can deliver more cost-efficient operations," Tom Koustantonis, the South Australian Minister for Minerals and Energy Resources, said at the centre's opening ceremony.

Remote mining technologies are becoming increasingly important to miners under cost pressures. Rio Tinto, which launched its "Mine of the Future" programme in 2008, has operated so-called autonomous haulage systems, or driverless trucks, for a number of years.

With 53 autonomous vehicles in its fleet, Rio Tinto has reduced its staffing costs and claims the technology makes its mines more efficient and safe, "creating direct increases in productivity".

The group has also offered to facilitate the use of University of Tasmania-researched, AMIRA International-funded, [laser analysis technology](#) for the analysis and categorisation of mineralisation at the earth's surface. By identifying deposits via the presence of trace elements in rocks at the surface, the technology has the potential to bring down preliminary exploration costs.

The usage of [geographical information systems](#) (GIS) to display project data and engage with shareholders has also been posited as an area in mining ready for extra technological input.

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