Sensing success

The Australian Deep Exploration Technologies Co-operative Research Centre has signed a commercialisation agreement with Boart Longyear for its downhole sensing tool

The Deep Exploration Technologies CRC (DET CRC) has been established to address the most significant challenge to the future of the minerals industry, i.e. the reduction in the mineral-resources inventory due to high production rates and low mineral-exploration success.

In the Australian context, mineral resources constitute approximately 50% of the nation's exports. However, 80% of Australia's mineral production is from mines discovered more than 30 years ago.

The vast majority of Australia's existing mines are located where basement is outcropping or shallow. In order to ensure the future of mining in Australia, and indeed in all the more heavily explored countries of the 'western world', new technologies must be developed to explore to greater depths, and under cover, in the vast, prospective areas of deep, covered basement.

The DET CRC is an industry-initiated and industry-driven response to the key long-term challenge facing the minerals industry: the need to replace, through exploration, the ever-more rapidly depleting existing stock of mineral resources.

Curtin University researcher Andrew Greenwood with the AutoSonde downhole sensing tool at the DET CRC Brukunga Drilling Research & Training Facility

SONDE SIGNED

In its first major commercialisation outcome, DET CRC has signed an exclusive agreement for its in-hole sensor technology, AutoSonde, with Boart Longyear, global supplier of drilling services, drilling equipment and performance tooling.

The AutoSonde, developed by DET CRC participants Globaltech Corporation and Curtin University, provides geophysical logging information similar to that recorded by conventional wireline logging, but with significant reductions in costs, inconvenience and risks involved.

The AutoSonde is lowered inside drill rods to the bottom of the hole on completion of drilling, and the hole is geophysically logged while the rods are being pulled out of the hole.

This removes the need for a separate conventional wireline logging crew or additional rig time, as well as almost completely negating the risk of hole collapse before or during logging.

The tool can be combined with a survey tool so that geophysical information can be recovered at the same time as a routine hole orientation is performed. Logging results are delivered to the explorer as soon as the drill hole is completed.

The AutoSonde represents a step change in the quality and amount of data the minerals industry can now capture. ►

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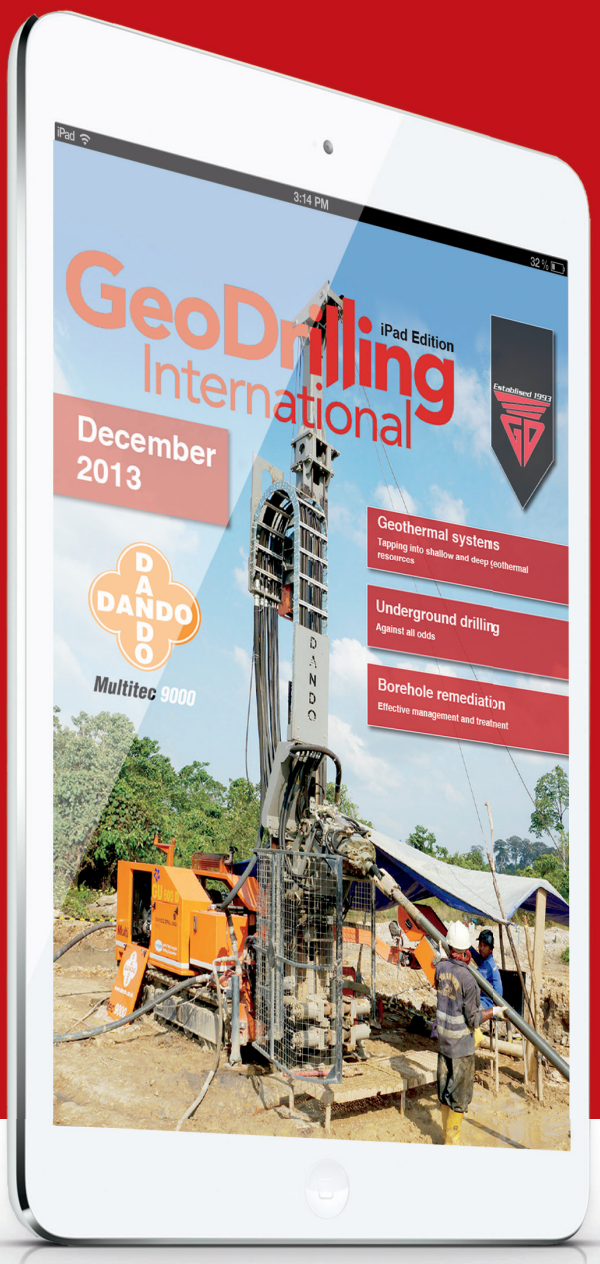

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TECHNOLOGIES

The commercialisation agreement with Boart Longyear is for a total count gamma sensor, with additional sensors such as magnetic susceptibility, induction and spectral gamma still in development and to be offered separately for commercialisation.

The gamma sensor measures naturally occurring gamma radiation, which is commonly used in mineral exploration to characterise different types of rock and alteration related to mineral deposits.

DET CRC chief executive professor Richard Hillis says the AutoSonde commercialisation agreement with Boart Longyear is a significant milestone in the CRC's history, and is a precursor for other key technologies currently being developed.

"The AutoSonde agreement is the first of our three key pillar technologies to be commercialised, with the other two technologies, the coiled-tubing (CT) drill rig and Lab-at-Rig top-of-hole sensing, in development and showing enormous promise," he says.

"DET CRC has had a long and strong association with Boart Longyear, and the commercialisation of the AutoSonde will build on Boart Longyear's market-leading capacity to deliver a comprehensive package of drilling services and products, including downhole sensing."

Since its inception, DET CRC has focused on developing solutions that will make mineral exploration cheaper, faster and safer and result in a greater number of mineral discoveries. In less than five years, significant inroads have been made to deliver on that objective.

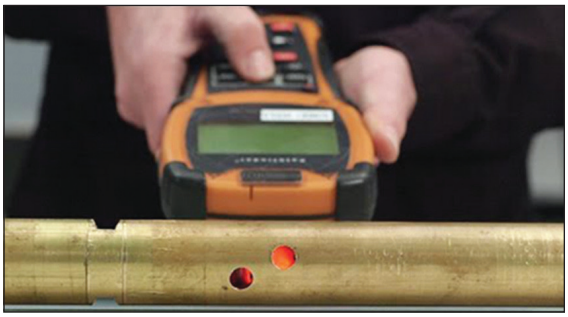
TRUPROBE

Kent Hoots, senior vice-president of Boart Longyear's products division, says the commercialisation agreement was a key strategic decision for the company and would see it expand its product offering in the in-hole instrumentation market.

"The primary focus for the introduction of this technology will be mineral exploration, initially with diamond coring, but there will be additional opportunities for the introduction of the tool in reverse-circulation and mud-rotary drilling," he adds.

"The AutoSonde is an enormous step forward as a combined survey and gamma tool providing geophysical information at a lower cost than a traditional geophysical survey.

"We have had a strong partnership with DET CRC since it was established, and the AutoSonde is a demonstration of its impressive focus on commercial outcomes that will benefit the industry long into the future."



The AutoSonde will be marketed as TruProbe by Boart Longyear

The AutoSonde will be released as TruProbe, one of three tools in Boart Longyear's first-in-industry instrumentation line. The Tru range is designed to bring more technology into the hands of the drill crew, and ultimately, to bring more value to the client.

In 2014, Boart Longyear launched its TruCore core-orientation system to the Australian market. TruCore, which enables drillers to mark more core in less time, launches in North America this year. The TruShot survey tool is also expected to be launched in Australia and North America in 2015. TruProbe will be introduced to the North American market in 2016.

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