Maptek grows strongly in Africa

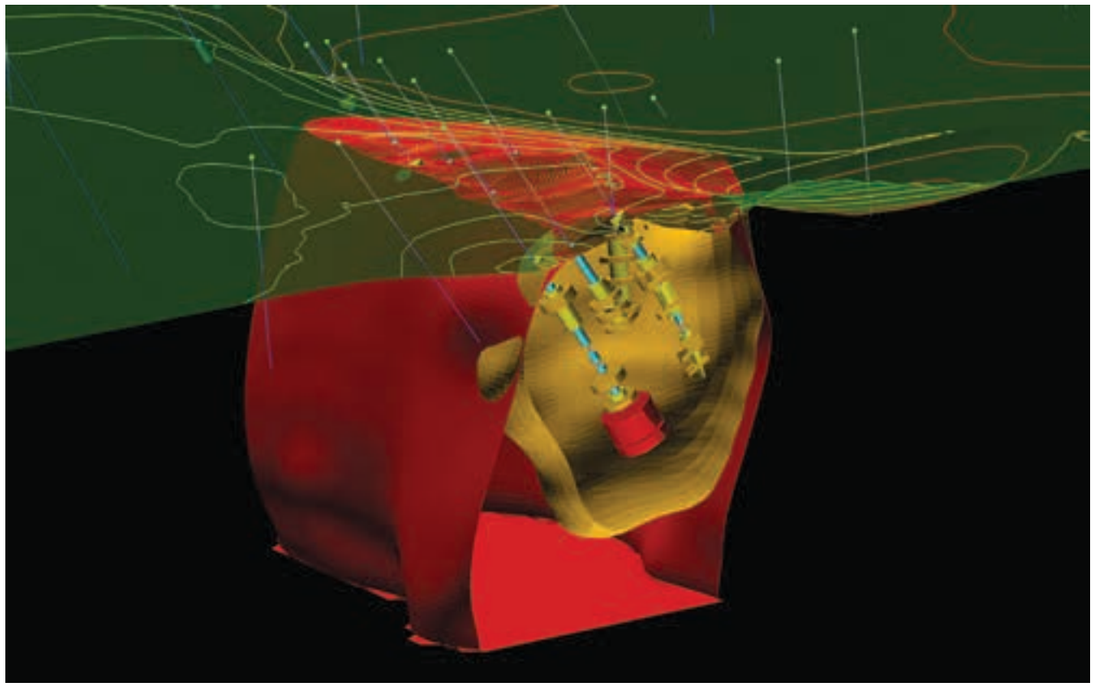
Maptek, the Australia-based company which can claim to have been one of the pioneers in applying computer technology to geological modelling and mapping and mine planning and design, has established a strong footprint throughout Africa, with many of the continent's major mines now counting as customers. Sales and support in the SADC region (which includes key countries such as the DRC and Tanzania) are handled by Maptek's South African office in Johannesburg, headed by Nick Venter, General Manager Africa. He says that Maptek is growing strongly across the continent with 2016 counting as one of its best-ever years.

The South African office was established in 1989, roughly eight years after Maptek itself was founded in Australia by geologist Dr Bob Johnson, under the name K Robert Johnson & Associates. The name 'Maptek' was adopted in 1992, by which time the company was already expanding into global markets with offices having been established in several countries including the US and UK. Since then Maptek has expanded further with offices being opened in Canada and throughout South and Central America and with distributors in place in many other parts of the world.

Johnson – who was inducted into the International Mining Technology Hall of Fame in 2015 – started Maptek to develop mining software that could be operated easily by geologists and mining engineers. The company's core product, Vulcan, was introduced in the mid-1980s and provided the foundation for the company's success. One of the first 3D modelling and mine design software packages in the world, Vulcan is still at the heart of Maptek's offering with more than 7 000 users worldwide.

Vulcan can play a role at every stage of mine development – starting with exploration and geological modelling and going through to mine design and scheduling and, ultimately, rehabilitation. It incorporates powerful block modelling and integrated tools for survey, drill and blast, grade control, geotechnical analysis, geostatistics, scheduling and optimisation. It is now in version 10, which is delivered within a new platform, the Maptek Workbench. This provides an architectural backbone allowing enhanced workflows and data sharing between Maptek products.

Vulcan 10 includes a powerful Implicit Modelling tool.



Interestingly, Vulcan assisted in the dramatic rescue of the trapped Chilean miners in 2010, an event that captured the imagination of the world. An accurate topographic model and 3D representation of the complex underground workings at the San Jose mine where the 33 miners were trapped was created in Vulcan and was subsequently used to map and plan several drill holes that were a vital part of the rescue operation.

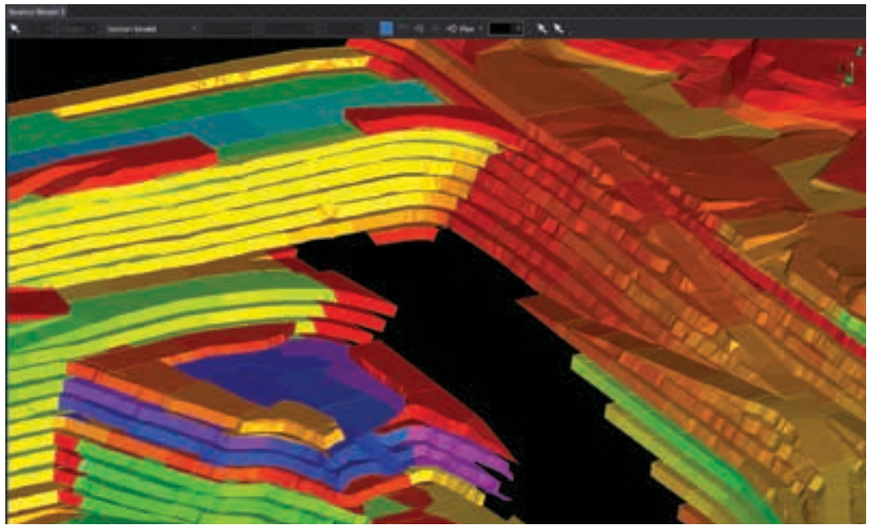
Today Vulcan is part of a comprehensive suite of products. It was joined in the Maptek lineup by I-Site Studio – designed for the modelling and analysis of 3D laser scan data – in 2000 with the MineSuite system for mine information and reporting being added in 2001. A drill and blast management system, BlastLogic, was added to the portfolio in 2011 and was followed by Eureka, which allows all geospatially located exploration data to be viewed in a single 3D environment, in 2012.

In 2013 PerfectDig, an easy-to-use system for rapidly evaluating and supporting design conformance, was introduced with Sentry, a flexible and cost effective solution for detecting surface change, following in 2014. The most recent product to be added to Maptek's line-up is Evolution, which the company describes as "a strategic and tactical mine planning tool for scheduling and optimisation in opencut mines."

Although Maptek is primarily a software company, it entered the surveying equipment market in 2004, when it introduced its own Australian-built 3D laser surveying and digital imaging hardware. The current range is the I-Site 8200 series, which can be used both on surface and underground. The hardware is optimised for use with Maptek's software and is used not only in the mining industry but also in civil engineering, agricultural and other applications.

Maptek's I-Site 8800 laser scanner. It can be used in open-pit or underground mining applications.

Outlining Maptek's engagement with Africa, Venter – who leads a team numbering 14 people – says that when the South African office was originally founded the focus was more on Africa outside of South Africa than South Africa itself. "The result is that we have excellent penetration of the markets in countries



Maptek Evolution produces medium, long term and strategic life of mine schedules.

Vulcan assisted in the dramatic rescue of the trapped Chilean miners in 2010, an event that captured the imagination of the world.

such as Zimbabwe, Zambia, the DRC and Tanzania," he says. "In recent years, however, we have devoted considerable attention to South Africa and we now have a better balance, with the South African mining sector accounting for almost a third of our African business."

According to Venter, Maptek's scanning solutions are proving particularly popular in Africa with some notable successes being notched up. One case study he points to is the use by De Beers of the I-Site Studio software in combination with the I-Site 8800 laser scanning system at its Venetia diamond mine in Limpopo Province. In 2006 the mine began using I-Site laser scanning to survey the pit and stockpiles, upgrading to the I-Site 8800 laser scanner in 2012.

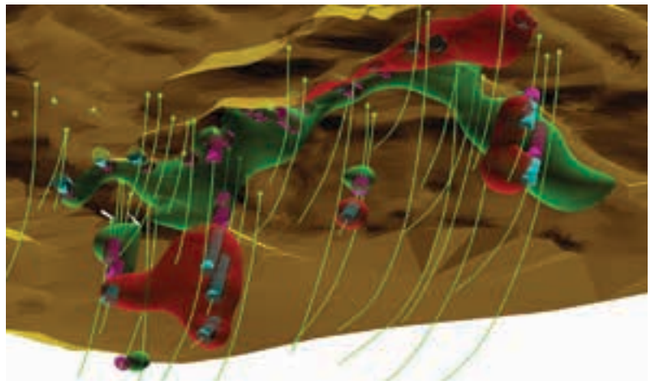
The I-Site Studio software is used to create a pit surface for month end production calculations. Toes and crests, and contours from this surface are applied to generate various plans for different departments. The pit surface is important for identifying the amount of waste and ore mined. This is measured by making the waste and ore block models part of the overall volume calculations.

Previously, surveyors had to enter every loading area to record material being loaded. The long range scanner requires far fewer setups, which saves time and minimises safety issues. Measuring the rehabilitated waste dumps with a GPS or Total Station typically took one day. This was cut to three hours with the I-Site 8800 long range scanner, with fewer setups reducing the physical effort as well.

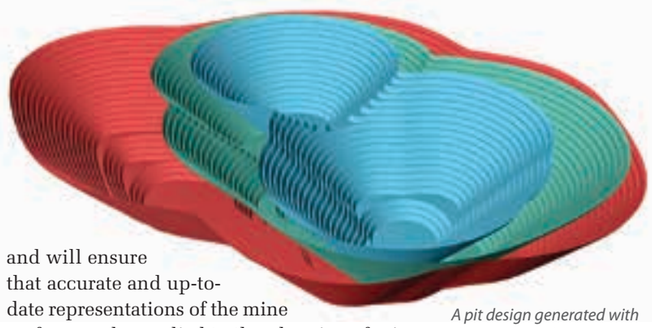
Venter notes that among Maptek's clients across the continent are some of the biggest names in mining, including not only De Beers but many other 'blue chip' mining groups such as Randgold Resources, First Quantum, various Anglo group companies, Vedanta and Barrick. "Our employees travel widely in Africa in support of our customers and we are known for the quality of our technical support and our consulting services," he says.

An interesting development in the mine ventilation field is Maptek's collaboration with VUMA, a subsidiary of leading South Africa-based mine ventilation solution provider Bluhm Burton Engineering (BBE). The two companies executed a memorandum of understanding last year to facilitate the integration of Vulcan with VUMA's software, developed for the analysis and design of underground mine ventilation and refrigeration systems.

"This integration will allow mine survey and design data to be used in ventilation and cooling analysis, without replication of data,



Implicit Modelling provides resource geologists with a new method for interpreting a deposit by generating automatic models of complex geological domains from drillhole information.



A pit design generated with the Automated Pit Designer in Vulcan 10.

and will ensure that accurate and up-to-date representations of the mine surface can be applied to the planning of mine ventilation systems," says Venter.

Venter also mentions that the MineSuite software is now being marketed globally by MinLog. "We have a stake in MinLog's South African operation and work very closely with them," he notes. He adds that the partnership between Maptek and MinLog has seen MineSuite becoming ever more capable. "It is now one of the few products on the market able to integrate various business processes across a variety of disciplines into a single source of operational information spanning the entire mining value chain."

Venter sees further growth for Maptek's products in Africa. "Mines around the continent are looking to technology to enable them to work efficiently and contain costs," he explains. "This provides huge opportunities for us as we have what is arguably one of the most complete suites of mining software available in the market and are well placed to be a mine solutions technology partner to the African mining industry. Our sales have seen good growth through the downturn in mining that has been experienced over the past two or three years. Now with a recovery underway, this trend can only strengthen and we are very positive about prospects." ■