



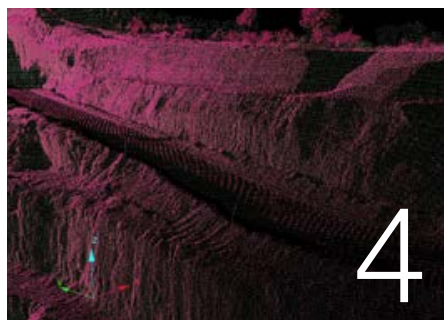
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- Vulcan custom scripting
- I-Site Studio 5.0
- BlastLogic performance
- University partnerships
- PerfectDig decision support
- Vulcan development roadmap
- Combined mapping solution
- Eureka field geology tablet



Maptek has been showcasing our products and services at tradeshow around the world. The calendar on page 13 shows events where we'll be at during the next 6 months. Visit our booth!





In this issue

Rugged, safe and easy to use, Maptek technology is fit for purpose.

Maptek systems provide the tools for better understanding and applying technical data to optimise operations.





Seamless integration between field and desktop makes digital data immediately available for reviewing conformance, assessing risks and refining designs.

Maptek works with industry to target product development and deliver responsive services. We help universities prepare competent graduates with the technical knowledge and experience that is demanded by mining companies.

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Vulcan custom scripting unlocks answers

Resource Geologist, Steve Polkowski discusses the use of Vulcan scripting and object attributes to model geology at the Pogo Gold Mine, and unlock the 'known unknown'.



Pogo Gold Mine is located near Delta Junction, Alaska. Exploration began in 1990, gold deposits were discovered in 1994 and production was launched in 2006.

The Pogo mine exhibits a large scale quartz vein system, often with well-defined hanging walls and footwalls on the ore zone. The size and age of the deposit present many complications. The original shape was far from perfect with local pinch and swell common.

This structure was later intruded, sheared, and faulted. The original grade was often very locally stratified. Mining this deposit economically sometimes results in missing footwall data where nearby drilling anticipates good grade on the footwall up-dip, but the drilling is too distal to rely on for local vein thickness. This information should be considered for the next up-dip stope design.

Where data is missing, the objective is to infer reasonable data points for applying to stope design.

Geological modelling

The geological model requires a footwall. Data often only dictates that it is 'at least' this far down; it does not always show exactly where the footwall is located.

Point attributes, specifically the display attributes, are used to portray source data and confidence level for individual points.

The geology department stores drilling data in a third party SQL backend database. Maptek™ Vulcan™ simplifies connection to the database which is available to engineering staff through an ODBC connection. This allows them to access the most current data and eliminates export time.

Drilling data is not the only information used by geologists for modelling the deposit. In-stope data points recorded using a total station carry the highest priority, and take precedence whenever there is a conflict. These points, along with the drillhole data points,

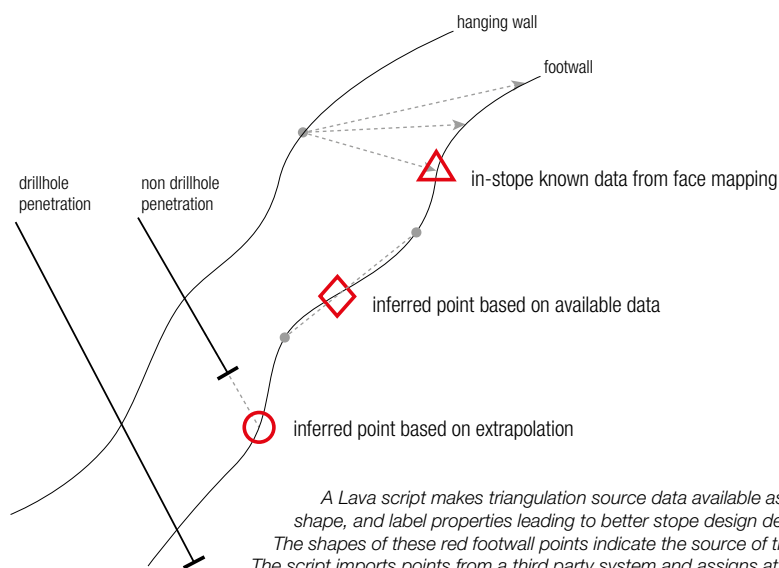
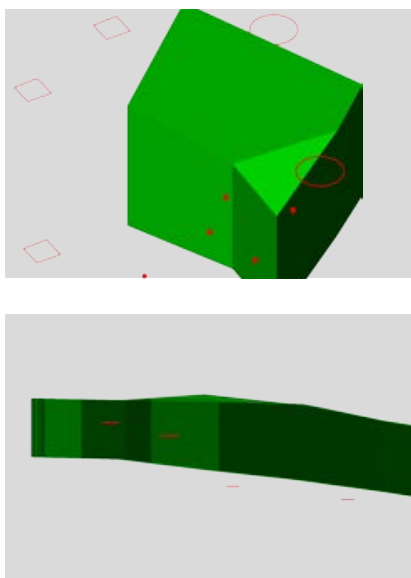
are supplemented by inferred data points when the geological model requires further definition.

Issues

A common problem is a locally missing footwall. The original physical dimensions of the vein system vary locally and are further complicated by subsequent faulting. For production reasons, a stope may be mined following only the hanging wall.

A geological model update, based on this in-stope data, lacks a local footwall location. In the absence of local drilling, the conservative approach is to model the footwall to the lowest elevation represented in production face mapping.

The result is a physical geological model that represents a vein that is 'at least this thick'. The problem is that the stope design engineer does not know, by just looking at the physical or grade models, what areas are questionable.



Differentiating source data

When modelling, a common practice is to use different display styles for points to portray different types of source data.

At Pogo mine blue is used for hanging wall and red for footwall. Further, the shapes of points are important, especially in the inferred data set.

- > Triangle: A 'regular' inferred point, interpreted from a face map.
- > Diamond: An inferred point that extrapolates the model as far as possible based on the available data.
- > Circle: An inferred point that extends the model based on extrapolation from drilling intercepts. This most often happens when adjusting position and elevation data from older surface holes with deep intercepts.

Another point attribute provides a description of the source for the point location. Inferred and extrapolated points can be labelled with the stope that generated the data. If the point data source was a drillhole, the drillhole ID goes into that same attribute. Setting the 'label' to that attribute shows the data source for each point.

Even without labels, the shapes of the points in various areas yield important information when designing a stope based on the provided model.

An area where the footwall data is defined by all diamonds indicates that the geological model extends at least down to that elevation, but the real footwall may be significantly lower.

The data is made available to the stope design engineers via an ODBC connection and Lava script. This makes the most current data

available without requiring constant requests for exports from the geological database. The script assigns the correct symbol name based on the type of point; it also assigns the label data.

Running the script is simple and fast, making the script-created layers disposable, with no need to maintain them.

Lava script

A Lava script based on the Pogo mine example is available in the Maptek Users Area at users.maptek.com. Navigate to Solution Articles and search for 'Script: Reading a CSV through ODBC, creating points, and assigning attributes using Lava'.

*Thanks to Steve Polkowski
Resource Geologist
Sumitomo Metal Mining Pogo LLC*

I-Site Studio 5.0 boosts survey workflow

Maptek™ I-Site™ Studio 5.0 delivers new features and improvements to existing software tools to further boost survey efficiency and productivity.



Hallmarks of Maptek™ I-Site™ laser scan technology include easy setup and use, featuring familiar workflow and integration with site survey practices. I-Site Studio™ software brings out the real value in the scan data - superb accuracy and flexible reporting.

I-Site Studio 5.0 introduces new capability for quick and easy viewing of large datasets. Applying a **Level of Detail (LOD)** function to the data allows a manageable amount of data to be loaded and viewed at one time.

A new **Workflow manager** allows users to create their own workflows. A series of transactions can be shared and adapted within survey teams and launched from custom toolbars to save time on routine survey data processing and analysis. The status of the current process is conveniently highlighted.

The **Global registration** interface has been streamlined and smart sampling has been introduced. Tolerance ellipsoids can be set and viewed for each scan. Multiple scans from the same location can be moved together as a group. It is now possible to register 2 scans unlevelled, but constrained to a GPS point in global registration.

The **Combination surface** tool allows a new surface to be outside the original surface, which is often the case when mining operations expand. The function no longer requires completely closed intersections between surfaces to generate a new solid.

Additions to the **Geotechnical module** allow easier analysis of different failure modes and more intuitive display of results.

A maximum discontinuity area can now be specified in the **Extract discontinuities** tool.

A **Kinematic analysis** option allows analysis for potential failure types such as wedge, planar and toppling.

Software development is enhanced by responding to user feedback.

Stereonet display improvements include type, grid style and scalable pole size. The great circle tool now autopopulates from a stereonet selection.

The new **Vegetation filter** includes a new wizard-style interface, with an option to remove objects above evenly distributed low points in a selection. A distance from ground slider dynamically updates the view of points to be removed.

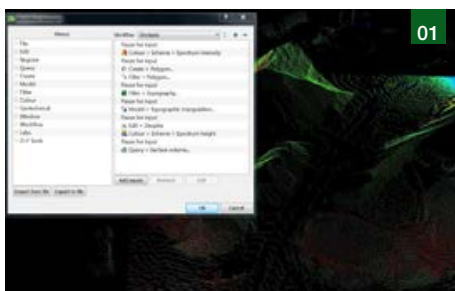
The new **Panoramic photograph to scan** tool renders a 360° panoramic image captured with any digital device to an I-Site point cloud. Improved standard rendering allows up to 7 images to be rendered to a single surface.

Import/Export options are expanded to .e57 and .las files, with a new Maptek file format supporting transfer of any objects in the database between Maptek applications.

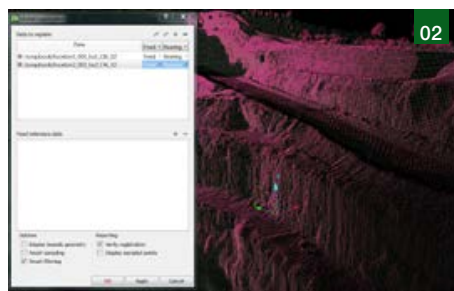
Usability enhancements include creating default legends for colouring objects; saving views; licence borrowing; and new reporting formats.

I-Site Studio 5.0 is in the final stages of beta testing, with release to customers scheduled for July.

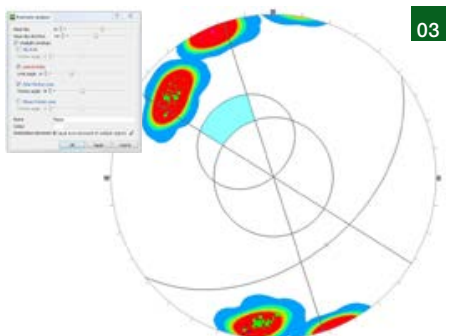
01 Workflow manager
02 Global registration
03 Stereonet improvements
04 Colour legend editor



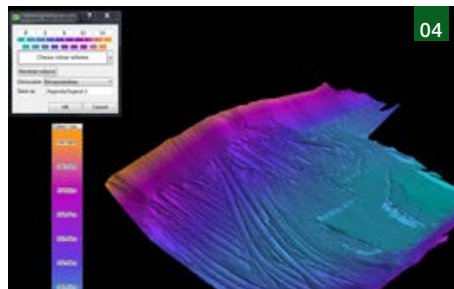
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02



03



04

Instant access to digital blast data

Maptek™ BlastLogic™ is a paperless system which provides instant access to site blast data. Analysing blast performance allows for continuous improvement.



4:30 pm Shift finished!

The drill and blast engineer puts the finishing touches on tomorrow's blast design and decides to check emails before logging off for the day. There is an email from operations. Blast requirements have changed. Two smaller blasts are being combined so a revised design is needed for the blast crew in the morning.

This isn't unusual - mine sites are dynamic environments with designs and plans constantly changing. Using conventional drill and blast software to create the new blast pattern would mean a long night at the desk. And an even longer one if relying on spreadsheets! Fortunately this engineer uses Maptek™ BlastLogic™.

BlastLogic is a paperless system. Data is immediately available where it is needed.

Multiple users can access the same, up-to-the-second data. Recalling previous blasts for analysis is instant.

The dynamic 3D environment helps make obvious connections between drilling, designs and patterns. Changes can be made quickly and easily.

The drill and blast engineer opens the blast design to make the required changes. Drilling data is imported automatically from the drill navigation system and immediately matched to each design hole before updating the charge plan with one click.

A catalogued blast with similar conditions is referenced to check its performance. Different scenarios are considered before the optimal charge plan is selected.

There is a fault running through this bench. The engineer checks and tweaks the design row-by-row using the cross-section profile tool. The charge plan is updated and reviewed in minutes.

4:45 pm New design finished!

The new blast design is finished and shared to the BlastLogic tablets ready for the blast crews in the morning.

NEXT MORNING ...

5:30 am The blast crew arrives and is briefed on the day's work. Many of the holes from the second, smaller blast have not yet been checked for depth and water.

Fortunately the BlastLogic tablet allows the crew to dynamically update charge plans hole-by-hole as they input new dipping data.

6:05 am Connection to the network is not reliable in this part of the pit, but that won't slow down the loading of holes as the data is cached on the BlastLogic tablets.

Some holes are identified as wet. The charge plan is instantly adjusted according to the parameters defined by the engineer in the BlastLogic charge rules.

12:40 pm Four explosive trucks and 2 stemming trucks are involved in today's work. The loading by each truck deck-by-deck is instantly recorded and synchronised to the BlastLogic system so progress can be tracked across the blast team.

The team has worked together over many blasts. BlastLogic promotes clear communication and aids productivity.

The digital data is easily matched to the reality on the ground so shotfirers, truck operators and support crew all work in harmony. Charge plans are continually updated and able to be tracked, underpinning the accuracy and efficiency of the blast process.

2:30 pm Kaboom!

Observations recorded against the blast indicate that the blast has been successful. There is no time to celebrate; the team is already working on the next pattern.

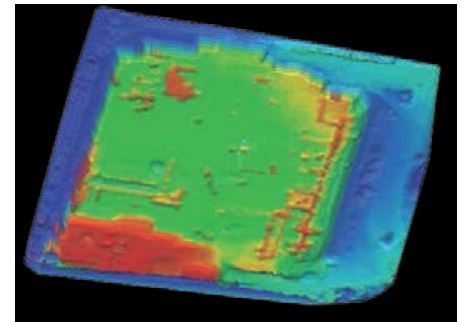
BlastLogic automatically catalogues daily activities and results. They can be easily recalled to help improve future blasts. Reports are immediately generated and circulated to management.

To find out how your site can benefit from BlastLogic, email blastlogic@maptek.com.au



Partnering with universities worldwide

Maptek maintains strong partnerships with universities, donating software licences and equipment, as well as providing time and expertise to train future mine professionals.



Universities and industry benefit. The institutions can attract students with practical courses and produce graduates with industry-ready knowledge. Maptek helps prepare the next generation of mining professionals.



University of California, Los Angeles

Maptek provides 35 I-Site Studio licences for graduate and undergraduate students to gain proficiency in geodesy, advanced mapping, topographic mapping and change detection.

Engineering students are queuing to take the popular course in Engineering Geomatics at the University of California, Los Angeles (UCLA) in the United States.

Students migrate data to a globally geo-referenced coordinate system using various geodetic models and learn about ellipsoid and geoid models, 3D scaling, translation and rotation in analytical and matrix formulation. They also explore the mathematics behind geodetic reference frame models of Earth.

Their final project involves capturing a multi-epoch dataset over several weeks in an area with changing topography, typically a construction site. I-Site Studio is used to register multiple scans, filter data and create surfaces for contouring and mapping changes. This year the students also constructed virtual models of campus buildings using I-Site Studio spherical surface modelling tools.

'Our graduates have a sophisticated skill set in modelling engineering sites for construction and change,' said Dr Robert Kayen, Professor of the Department of Civil & Environmental Engineering at UCLA.

'I-Site Studio is an extremely important module of our Engineering Geomatics course. It has been critical for learning aspects of geodesy, terrain modelling and civil engineering construction planning.'

Catholic University of Santiago

Industrial and Civil Engineering students in Chile are given a basic grounding in geostatistics, with the help of Maptek and Vulcan.

'We make Vulcan licences available. It's a great way to convey theoretical and technical knowledge to the next generation of mining professionals,' said Senior Vice-President of Maptek in South America, Marcelo Arancibia.

He enjoys passing on his expertise to 50 students each semester in Introduction to Geostatistics with Exploratory Data Analysis. The course covers Kriging and other estimation techniques.

'The key for students is getting to use the same state-of-the-art tools as mining companies. In Chile, knowledge of Geostatistics and Vulcan are both essential for graduates when they're looking for a job. It improves their opportunities as they start their careers,' said Marcelo.



Narvik University College, Norway

Engineering students at Narvik University College can now use Vulcan. Located in mineral rich northern Norway, Narvik is renowned for the quality of its mining courses.

Narvik approached Maptek in early 2014 about using Vulcan mine planning software in their Engineering program, particularly in Introductory Mining Engineering and Principles of Surface Mine Design.

Mahdi Shabanimashcool, Associate Professor in Rock Mechanics and Mining, chose Maptek for the best combination of software performance and technical support.

In April Narvik acquired 30 academic licences and Carles Xandri from Maptek Edinburgh office trained the lecturers in the software, with a focus on block modelling and open pit mine design. The ability to write scripts to generate customised panels particularly appealed to them.

Narvik University College students will use Vulcan for geological modelling, grade estimation, mine design and much more. Maptek looks forward to an ongoing relationship with Narvik University College on future projects.



Universidad Autónoma de Zacatecas, Mexico

Staff and students at the Universidad Autónoma de Zacatecas in Mexico can access 20 Vulcan software licences in their Earth Sciences laboratory.

More than 780 students study across 3 professional streams: Metallurgical Mining Engineering, Geological Engineering and Environmental Science.

'The University focuses heavily on academic research, and we are delighted to be linked with industry and the latest mining technology,' said Hermes Robles Berumen, Professor of Earth Sciences.

'Incorporating advanced software packages such as Vulcan in our training courses helps individuals to achieve their personal goals.'

'It also adds value to the preparation of competent professionals who can contribute to the development of our state and national mineral resources industry.'

Staff from the Maptek office in Mexico City help with training in the Earth Sciences laboratory.



Central Institute of Technology

Final year students at the Central Institute of Technology in Perth, Western Australia take advantage of the latest I-Site technology to prime them for their survey careers.

Established in 1900, the Institute offers a city-based simulated underground mining environment which allows students to be trained in mine safety, geology and face mapping techniques.

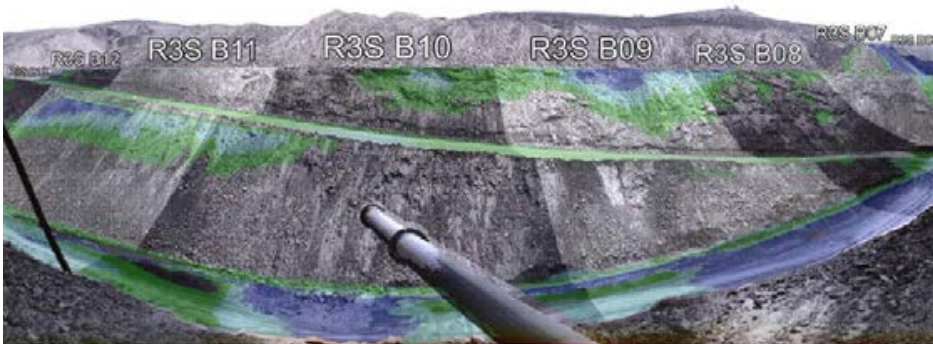
I-Site laser scanning demonstrations and data processing with I-Site Studio software form part of a subject called Monitor Complex Engineering Structures. Students are exposed to laser scan technology so that they can make informed decisions on data capture in their future workplaces.

'Our students are likely to be employed in mining or engineering construction where they will have some influence on survey equipment selection and acquisition,' said lecturer, Martin Robinson.

'It is essential they have a good working knowledge of laser scanning, and understand the advantages and limitations of this technology.'

Daily performance reporting

Maptek™ PerfectDig brings together multiple technologies and philosophies to support real-time decision making and meet the daily mine design conformance challenge.



It is not always easy to compare a 3D model with what you see in front of you. Maptek PerfectDig overcomes this by capturing a scene in 3D with the Maptek™ I-Site™ 8810 laser scanner, overlaying a design and then presenting the information as an interactive photograph so that you can relate it to the real world.

PerfectDig is easily controlled with a stylus on a rugged field tablet. Field users can distribute data online without having to return to the office or process data. Spatial data can be interrogated on mobile devices, for example for creating cross-sections to identify over or under-dig and safety issues.

Dragline

During a recent PerfectDig trial a dragline pit was scanned to review the low wall compliance.

Within 10 minutes, engineers in the pit were viewing scan data with existing models and comparing these against the projected design.

It was immediately apparent that the low wall had been dug to a batter angle of 35° while the design was 45°. With 2 clicks a cross-section was generated to interrogate the scene further.

This revealed that the toe of the ramp, while shallow, did not protrude beyond the previous coal line indicated in the design.

It was a simple matter to derive a typical ramp angle of 5° and investigate areas of non-conformance along the constructed ramp.

PerfectDig now displays blocklines, allowing non-compliance volumes to be reported against blocks.

Shovel

Scanning a shovel excavation of a presplit area revealed that floor level conformed reasonably well to design. The wall however was mostly over-dug; since it was a presplit wall this presented potential drill and blast issues.

Cross-sections quickly determined the distance from the active face to the designed end wall. Using previous blast scan data, the conformance report generated volumes and automated cross-sections for further analysis.

Dozer/Excavator

At another location in the pit, a preparation pad was surveyed with 4 scans. The floor at the northern extent was too high,

but moved toward design RL further south. A conformance report was quickly generated from various scans of the area.

To scan the area, compare digging to design and generate a report in PerfectDig would take about 30 minutes. No additional work is required back in the office.

A single site visit demonstrated the measurable benefits of using PerfectDig to convey hard evidence of digging conformance. Communication of designs is clear and concise.

Safety and efficiency can be enhanced through digital exploitation of as-built data.

PerfectDig presents data in a way that supports engineers and management to make the call to adjust digging before problems arise, ensuring a safer pit and maximum mineral recovery.

Rapid data processing and the applicability of that data for checking factors such as hardcap, batter angles, distances to face, over and under-dig, makes PerfectDig the ideal partner for productive and efficient mining.

Find out more by emailing perfectdig.sales@maptek.com.au

Resourcing Vulcan to maintain the grade

Director of Global Product Development, Scott Schell discusses the Maptek™ Vulcan™ roadmap and the challenges of keeping ahead in an ever-changing industry.



We all want Vulcan to remain world class. What does this mean to the development team?

Vulcan is the best overall GMP (general mine planning) software solution in the industry. A world-class development team sets the benchmark, consistently providing the best product, service and support, listening to customers and delivering solutions quickly. We have recently expanded our development teams in North and South America. They combine with developers in Australia to ensure we address regional as well as global needs.

How does Maptek prioritise development directions?

The Vulcan product development management team, led by Eric Gonzalez, defines the 'big rocks', or major projects for each release. Technical service leaders in each region define functionality that their customers want, and work with the team to prioritise these 'medium rocks'. Finally, the team prioritises and manages the eradication of defects, 'filling the jar' with these 'small rocks'.

What are the key issues in developing a long term roadmap?

The roadmap must balance competing forces such as company strategy, industry needs and changes, competitive threats, and architecture needs. Maptek gathers input through surveys and direct communication, to regularly update the roadmap.

What challenges have caused a change in priorities?

The biggest changes to priorities come directly from interactions with customers. For example, users were partitioning their data to fit it into Vulcan's constrained memory. This led to the 64-bit and Large Data projects, which allow dynamic access to all the available memory on the computer. Larger datasets have highlighted the need to further leverage the available CPUs and GPUs to improve processing performance; several smaller projects are now underway.

What other insights have arisen?

In conversations we found that several customers were spending a lot of time exporting/importing data to perform implicit modelling. So we created a superior implicit modelling tool within Vulcan to benefit all customers. The lack of standards in the industry makes data exchange difficult; making an API and SDK available has enabled our partners and customers to more easily exchange information.

How does development handle an ever-changing landscape of needs and market conditions?

Shorter release cycles can be more responsive to industry needs. A yearly major release is supported by minor releases every 2 months. This allows us to ensure that tools get into customers' hands quickly.

How does Maptek exploit the latest available technology?

We are currently moving our user interface platform to C#/.Net.

The new improved Vulcan workbench will be released in 2015. We are improving processing speed by using the hundreds of processors on modern graphics cards. We have replaced our graphics engine with a commercial offering which allows us to leverage the strengths of world-class graphics capabilities, allowing us to focus on our core offering.

What architecture/infrastructure is being awaited to deliver tools and functionality in Vulcan?

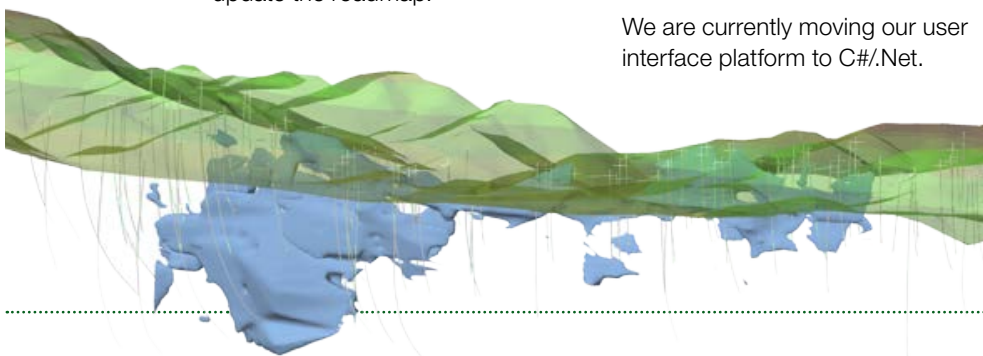
Advancements in development protocols will allow us to deliver functionality more quickly. The workbench platform will leverage more 3rd party tools, make localisation and internationalisation easier, and make our user interfaces more dynamic. Graphics engine integration allows users to visualise and manipulate more objects on the screen simultaneously; it makes the 64-bit and large data efforts come to life.

What activity demonstrates that Maptek is driving innovation?

Vulcan Implicit Modelling is one example. We have chosen an approach which allows users to combine implicit modelling with explicit and stochastic modelling to suit their operational needs.

Comment on your wishlist and the impact for customers.

We've invested heavily in R&D for the Vulcan workbench and graphics engine, and I'd like to see them standardised across all products. We aim to make our customers' lives easier, allowing them to complete their tasks more quickly and profitably.



Airborne mapping and laser scanning

A high-precision railway mapping project combined airborne mapping with mobile laser scanning for a 'proof of concept' for a transport corridor study.



Investment in airborne mapping earlier this year will allow Maptek™ to offer a comprehensive digital survey capability. DroneMetrex photogrammetric mapping and I-Site™ laser scanning both capture high quality, accurate data for users to easily measure and monitor surface changes.

A 'proof of concept' for a road-railway crossing study proved that the survey methods are complementary.

Airborne mapping

Aerial mapping with unmanned aerial vehicles (UAVs) is safe, efficient and cost effective. The DroneMetrex TopoDrone-100 reliably mapped 0.5 km on each of the 4 sides of the approach to a road and railway intersection. Capturing highly accurate data took only 2 hours.

The aim of the project was to create a 3D real world scene for obscurity analysis. It was essential to record the scene to show the perspective of both train and vehicle drivers when approaching the crossing. Airborne mapping data also provides valuable input for future repair and upgrade work.

The traditional lidar approach for corridor mapping was not economically viable for the small project area. Conventional ground survey would require temporary closure of the railway to ensure safety. Operating the UAV from the nearby field avoided interference with road traffic and rail movement.

The UAV captured aerial imagery with 25 mm repeatability in height. The DroneMetrex photogrammetric mapping system achieves high accuracy by addressing geometric errors at the point of data capture.

Deliverables included a very dense 3D point cloud, digital orthophoto mosaics, DTMs and 3D line mapping.

'A unique synergy of the most advanced terrestrial and UAV mapping systems made it possible to generate a detailed and accurate database for visualising and measuring the scene in true 3D,' said Tom Tadrowski, Managing Director of DroneMetrex.

Laser scanning

Adding terrestrial laser scanning to the project allowed capture of data which may have been obscured by vegetation, adding to the accuracy of the 3D scene.

The Site 8810 was mounted on a vehicle and driven along the road. Stop-Go scanning is extremely efficient. In just 2 hours, 21 scans were captured.

Combining point cloud data from aerial and terrestrial systems provides a more immersive data experience. Authorities can take measurements to validate that infrastructure is built and maintained to safety standards.

The benefit of the laser scan data lies in being able to show what happens when the scene changes. For example it highlights how removing a tree could improve driver visibility and impact on the safety of the crossing.

The trial demonstrates the way that photogrammetric mapping and laser scanning together can deliver a better result.

Accurate digital models and photographs also provide the basis for analysis and decision making in mining, geospatial, agriculture and infrastructure applications.

Maptek is working on a solution to simplify workflows, automate and semi-automate repetitive procedures, and decrease processing time.





How airborne mapping works

Is airborne mapping the same as photogrammetry?

Photogrammetry is the science of making measurements from photographs. The UAV is one vehicle for airborne mapping. The DroneMetrex system uses photogrammetry to calculate a dense point cloud and then a 3D surface. Mosaic and/or orthorectified aerial photos are also produced.

Does the UAV take photos, or does it have a scanner attached?

The UAV captures photos and orientation information in flight. All of the data is used for calculations, resulting in multiple deliverables such as data, imagery and models. Data from ground-based laser scanning completes the scene in areas with vegetation canopy, overhanging or complex structures.

Does the UAV fly over an area continually taking aerial photos?

Current systems fly 30-60 minute sessions, capturing aerial photographs. Flight data is downloaded and pre-processed in real time. Post-processing occurs after the UAV has landed. Most software packages take many hours to fully process the data, depending on the area flown.

How accurate is the 3D data?

The TopoDrone-100 UAV uses a gimbal to counter aggressive flight movements, ensuring the camera is always vertical. Data repeatability can be refined to 25 mm, given suitable operation. Combining geo-referencing with ground control points allows the processed data to be tied to the local coordinate system for higher accuracy.

Does the system require targets or ground control points?

The DroneMetrex system can use direct geo-referencing which involves logging accurate GPS data and post-processing with data from the local site base station. Ground control is not necessary with this method.

How safe is the system?

Airborne mapping systems enhance the safety of mine and industrial personnel. There is no need to approach active machinery or access unsafe terrain. Legal, operational airspace and training requirements, combined with site

safety procedures, ensure the launch and operation of UAVs is as safe as possible.

How does the UAV take off and land?

The TopoDrone-100 is controlled by a ground operator. It is launched automatically by catapult and remotely guided to slowly descend and slide along the ground to a stop in a designated area.

Where is Maptek's system in use?

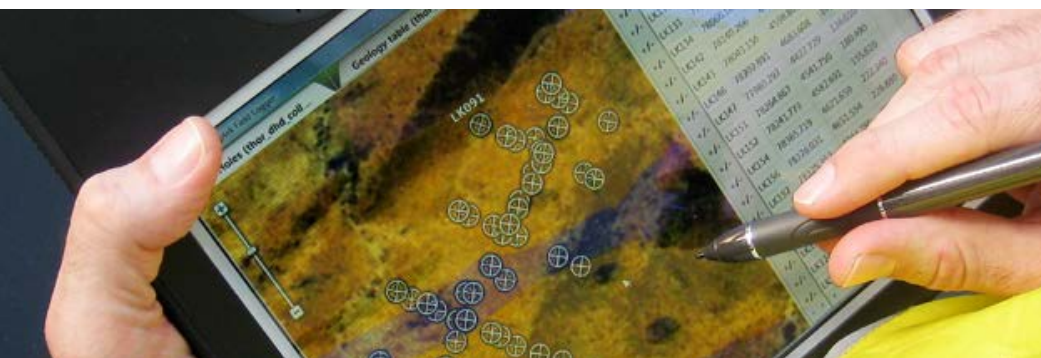
Maptek only recently began investing in airborne mapping solutions. Many of Maptek's customers are among the miners getting involved in UAV technology.

Does the system work with other Maptek products?

Integration with I-Site Studio, Vulcan and Eureka software extracts maximum value from airborne mapping data. I-Site 3D laser scanning systems naturally complement DroneMetrex aerial data.

For more information, email flight.sales@maptek.com.au





Eureka enters the field

Maptek™ Eureka™ is a unique exploration software system. A rugged tablet interface was field tested by Havilah Resources geologists in South Australia's outback.



Whether exploring for coal, oil and gas, or collecting data for environmental studies, field geologists usually work in a remote location in difficult, and sometimes hazardous conditions.

Meet the Maptek™ Eureka™ Field system which streamlines data gathering and ticks all the boxes as the latest field assistant.

- ✓ Rugged tablet PC withstands dust, extreme temperatures, water and even when dropped.
- ✓ All day battery life.
- ✓ Interactive editor for drillhole and sample logging.
- ✓ Operated by a stylus, drillhole data is entered via dropdown lists, handwriting recognition or virtual keyboard.
- ✓ Interactive 2D map displays drillhole locations and collar RL.
- ✓ Data sharing via 3G or wifi connection for automatic synchronisation of logged data with the Eureka desktop application.

Havilah Resources explores for gold and other metals in South Australia's Curnamona Province, which covers about 6000 square kilometres west of Broken Hill.

Havilah geologists found Eureka Field quick and easy for entering and uploading data. Their feedback has resulted in several enhancements.

Entering long sequences of numbers, such as metre interval core logs, is now easier with automatic population of the next sequence. Comments and other information can be saved and re-used to annotate field observations.

'The system is so simple to use and extremely versatile,' said Havilah geologist, Fergus Kiley.

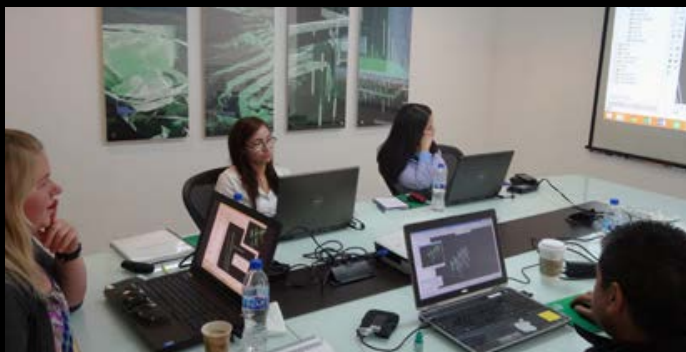
'I can see huge potential when interfaced with some of our other applications such as the portable Niton XRF field analyser and the drillhole survey camera through the existing usb port.'

'When we do have a network connection, uploading everything to the Eureka exploration project database along with the field drilling data makes our jobs much easier. Reducing the need for work back at the camp after a long day in the field is a bonus.'

The large font and screen layout improves readability and usability in bright sunlight and dusty conditions.

Eureka Field is a lightweight, rugged and integrated mobile data system which can replace pen and paper, camera, calculator and GPS. Making exploration data available in real time for review, modelling and analysis in the Eureka desktop application helps bring immediacy to projects.

To find out more on streamlining workflow with Eureka Field, email eureka.sales@maptek.com.au



Maptek Calendar

June 5-6

Elko Mining Show
Elko, Nevada, USA

June 10-12

Euro Mine Expo
Skellefteå, Sweden

June 11-14

EIG Conference
St Andrews, Scotland - Booth 17

July 9-12

Expotecnomin 2014
Lima, Perú - Booth E-02

August 11-13

II Cutoff Grade Optimization Course
Maptek, Viña del Mar, Chile

August 13-15

AIMS Annual Conference
Sydney, NSW, Australia

August 18-20

International Mining Geology Conference
Adelaide, South Australia

August 27-30

Congreso de Tendencias de la Actividad
Minera en México
Durango, México - Booth 37

September 10-12

Expomina 2014
Lima, Perú - Booth E-202

September 17-19

Mining World Central Asia
Almaty, Kazakhstan

October 21-24

XI Seminario Internacional de Minería
Sonora, Mexico - Booth 300

November 5-6

AusRock 2014
Sydney, NSW, Australia

November 17-20

Exposibram Amazônia 2014
Belém, Brazil - Booth D12

November 24-25

Orebody Modelling & Strategic Planning
Perth, Western Australia

December 9-11

Maptek South America Users Conference
Enjoy Hotel & Resort, Viña del Mar, Chile



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