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#### Welcome to our Forge newsletter December 2022

Commoditisation and technology-asa-service are two megatrends facing technology providers like Maptek.

The first trend challenges us to support customers to create value through our solutions and the second concerns flexible access and delivery of technology online.

Delivering on our goals helps everyone navigate changes in our economy, work and daily lives as we strive for a sustainable, safe mining industry.

In a recent interview I mentioned that sustainability success will depend heavily on industry collaboration, and our report card here is strong. Recently we've been helping Aeris Resources to upgrade their processes and workflows, providing a better connection between geology, mine planning and scheduling.

Our laser scanning technology is in use at Rio Tinto's Oyu Tolgoi mine, which relies on our IP65-rated systems for all survey applications, connecting digitally across mine planning teams.

This issue also uncovers what's guiding our global strategies for development of mine planning and mine operations functionality and how that will help change the way mining is done.

Collaboration with industry groups involves discussions around research and commercialisation of new technologies that mining companies require to drive their safety, productivity and sustainable ESG goals.

And finally we celebrate our Geology Challenge champions. Congratulations to staff and customers who entered the 2022 competition with a mindset to innovate and create tomorrow.

We wish you a safe, enjoyable holiday season and a renewed purpose for 2023.

Eduardo Coloma















Maptek continues to innovate on geological modelling, enjoy this 2023 preview of Vulcan GeologyCore

Contact us: forge@maptek.com

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## Transforming geology processes

A strong relationship between Aeris Resources and Maptek<sup>™</sup> has been key to a successful software rollout, establishing new geology workflows and procedures.

Aeris Resources is a mid-tier base and precious metals producer. Its copper dominant portfolio comprises four operating assets, a long-life development project and highly prospective exploration activities across Australia.

Mining at Cracow Gold Operation, 500 km northwest of Brisbane, Queensland, is by underground narrow vein methods. While there are several historical open pit mines on site, there is no active open pit mining. Future production may be from a combination of underground and open pit mining.

Maptek<sup>™</sup> Technical Services Consultant Geologist Andrew Sanggaran has been helping to establish robust geology processes and procedures to allow better planning for future mining.

'Standardisation of software and processes across the business was seen as a priority to drive efficiency and innovation,' said Brad Cox, General Manager Geology for Aeris.



(L-R) Paul Napier, Andrew Sanggaran and Brad Cox

The transition to Maptek<sup>™</sup> Vulcan and Vulcan GeologyCore was triggered by existing software being no longer supported and included all aspects of mine geology and exploration CAD workflows:

- Drillhole design and safety checks, tracking of downhole surveys to ensure desired targets are intersected
- Capturing underground development mapping and sampling data
- Geological interpretation, visualisation of the logging and assay data to create ore domains
- Grade control and resource block models used for strategic planning and ore extraction

Cracow has recently moved towards mining lower gold grades and remnant mining areas. This highlights the importance of getting the geology models right.

As the geology becomes increasingly complicated, additional drilling and detailed interpretation are required.

Cracow has 16 discrete ore shoots, each with multiple splays, making for 120 individual splays! Managing and maintaining the data is critical to providing timely, accurate models for detailed mine scheduling.

The changeover to Maptek software was not as straightforward as expected, with challenges finding adequate time for training and mastering the new functionality within the busy mining environment. Aeris also experienced high staff turnover and changes in mining practices.

Aeris Geology Superintendent Paul Napier acknowledged the significant commitment from everyone involved in the project. 'Initial planning and implementation were disrupted by unforeseen technical issues and simultaneous changes to people and processes.'

'When migrating the interpretation points they no longer matched the drillhole intercept depths due to variance in the drillhole de-survey algorithm. Writing the intersections to the database and then exporting with Vulcan de-survey applied solved the manual point migration process,' Napier added.

'Unfamiliarity with the new software led to initial reluctance from site geologists, requiring additional engagement to capture the key issues and resolve each challenge.'

'Maptek provides great service, and we appreciated the task-related training specific to our needs. When the project was stalling, we set up weekly meetings to address the remaining obstacles and drive the final implementation,' Napier said.

Geological block models are now updated in Vulcan, representing various mine provinces, engaging with geological interpretation, statistical parameters and variograms, and model validation. The Vulcan drillhole design tool has improved management of the medium-term drilling schedule and integration with Aeris mine planning software. While all required workflows are now fully established, Aeris continues to work with Maptek to identify and implement ongoing improvements.

Aeris site geologists are becoming confident in the software and are looking to start using the more advanced tools in Vulcan GeologyCore as well as digital mapping.

Thanks to Aeris Resources

## Measurement experience in the desert

Maptek<sup>™</sup> solutions are embedded at Oyu Tolgoi in Mongolia, supporting daily, monthly and annual survey data for a wide range of mining applications.



Oyu Tolgoi in the South Gobi region of Mongolia is recognised as one of the largest gold and copper deposits in the world. A series of orebodies that contain gold, copper and silver stretches over 12 km from north to south.

Oyu Tolgoi LLC is a Mongolian company, jointly owned by Erdenes Oyu Tolgoi LLC and Turquoise Hill Resources. Turquoise Hill Resources is listed on the Toronto and New York Stock exchanges, where Rio Tinto has 50.8% interest in Turquoise Hill Resources and manages Oyu Tolgoi on behalf of the partnership.

Open pit mining started in 2011 and the first concentrate was produced in 2013.

With the majority of Oyu Tolgoi's value lying deep underground, the Oyu Tolgoi Board approved the commencement of underground development in January 2022. Underground production is expected in the first half of 2023.

In 2013 Oyu Tolgoi purchased a Maptek<sup>™</sup> I-Site<sup>™</sup> 8400 laser scanner and the accompanying Maptek<sup>™</sup> PointStudio<sup>™</sup> data processing software (known then as I-Site Studio) for open pit survey applications.

In 2022, Oyu Tolgoi updated to the most recent Maptek XR3 M20 scanner model, suitable for cold climate operation.

More than 10 survey personnel use the hardware and software every day. The laser scanner is deployed for daily and annual survey tasks in the open pit operation and for monthly reconciliation of the stockpile near the concentrator.

The Oyu Tolgoi open pit survey team has relied on Maptek laser scanners and point cloud modelling software for 10 years.

Daily survey and stockpile volume measurements were previously a time-consuming manual task for the open pit team.

Recognising that using total stations took too long and caused mistakes in the surveying process, Oyu Tolgoi sought a reliable and faster way.

Implementing the integrated Maptek hardware–software system has resulted in an accurate survey solution that supports daily production through efficient data capture and processing.

Another benefit is the seamless operation between scan acquisition and data processing, with thousands of points captured accurately, imported easily and processed efficiently for reporting. Processed and modelled scans are widely used among mine technical, engineering, geology, geotechnical and tailings dam teams. Values estimated from scan data are also used by the finance department.

Overall, Maptek technology systems are easy to use, save time and deliver accurate measurements that can be applied to many operational requirements.

Oyu Tolgoi surveyors receive timely and accessible technical support from Maptek and IT Experts LLC, which has been the official distributor of Maptek products in Mongolia since 2012.

Thanks to Oyu Tolgoi LLC IT Experts LLC



## Creating tomorrow's mine planning

Maptek<sup>™</sup> recently reaffirmed the goal of developing and delivering technical solutions that improve efficiency and provide integrated decision support for customers.



Geologists and engineers want fast, accurate solutions that minimise tedious manual work when creating geological models and mine plans. Less time spent producing points, lines and polygons leaves more time for analysis of data and transforming that data into value.

Global Product Strategy Manager Jesse Oldham is committed to shortening the gap between data acquisition and value creation.

Product strategy planning focuses on ensuring Maptek<sup>™</sup> solutions, both present and future, are centred on transitioning data to value as quickly and as powerfully as possible.

'Several tools are being revamped for easier access, set up and use across the product suite, the Maptek Vulcan<sup>™</sup> interface is being modernised and data visualisation improved by leveraging new technologies,' Oldham said.

#### Digitalisation

Streamlining the user experience includes simplifying common Vulcan workflows coupled with processing that can handle larger, more complex data.

Maptek knows that our customers, and the industry as a whole, are looking for digital enabling technologies to help them keep up with the growing demands on their role and the operational tempo of the mines, all while keeping safety and environmental responsibility at top priority. Digitalisation needs also vary across the mining chain.

Some areas still rely on pen and paper, or have poor record keeping and little to no digitalisation or digital data acquisition in the field. Maptek is focusing on helping digitise that process and assisting with the associated change management.

Delivering on our customer success goals to create value through our mining solutions and provide flexible, online access to technology helps everyone navigate changes in the economy, and our work and daily lives as we strive for a sustainable, safe mining industry. 'Other points of the chain might already be well digitised, so we're focusing on streamlining the connection of data and workflows across that process, and making it easy for individuals and teams to collaborate using that data,' said Oldham.

Managing the introduction of digital pathways is often underestimated – change management is an important component of going digital with various processes.

Mining is not immune to the recent workforce upheaval and changing nature of the work. Aware of the staffing issues operations face, such as skills shortages, managing turnover and remote work, Maptek develops intuitive solutions to make it easier for customers to bring in new talent.





#### User experience

Simplifying the user experience and interaction between Maptek products is a core tenet of the development philosophy.

"We're looking to provide in-app guidance for users, supported by enhanced menu and panel workflows to help companies onboard new staff,' said Oldham.

Global skills shortages can be eased by lessening the learning curve, helping with onboarding and adoption, getting an employee up to speed quickly and producing value as fast as possible.

Walking alongside the customer in that journey of implementation and ensuring effective adoption helps maximise the value from their technology investment.

#### Engagement

Maptek engages with customers at different stages of their digitalisation journey, addressing specific needs or offering general guidance around use of the various technologies.

Oldham is excited about rolling out a larger suite of web and cloud-based services across different areas of the mine value chain and to different customer groups.

As well as performance benefits that come with cloud-hosted processing and storage, customers will experience a new degree of automation that will decrease the time between data acquisition and value creation. Recomputation of geological models and mine plans within moments of new data coming into the system allows for faster decision making and provides the ability to react to changing circumstances.

Additionally, these technologies allow users secure access to data, workflows and tools from multiple devices, thereby increasing collaboration, flexibility and efficiency in day-to-day work.

Presenting fast, accurate and optimised insights from their data helps customers gain value and make decisions faster, and ultimately guides efficient execution at the production stage.



## Confident, controlled domaining

Maptek<sup>™</sup> will introduce new audit controls and confidence measures for geologists, with a range of persistent model features taking the spotlight in DomainMCF in 2023.

As more customers around the world adopt the Maptek machine learning approach to domaining, the development cycle benefits from the wide-ranging user feedback. The latest DomainMCF incorporates new functionality addressing real needs and allows it to be embedded in day to day operations for mine and resource geologists.

Keeping an audit trail for a predominantly manual geological modelling process is often difficult. Direct input from geologists is required for the manual editing of database codes, interpreting data on screen or adding controls to assist wireframe generation. Without a clear audit trail it is not possible to exactly replicate a process.

The latest version of DomainMCF will save a file that embeds the input data and machine learning modelling process for future use. The resultant machine file can be downloaded and archived as a persistent history of the geological model. As more data is added, a machine file can be saved to capture the incremental changes.

The persistent file allows users to experiment with block dimensions in resultant block models. Outputs with 20x20x20m blocks can be made rapidly and visually validated. If they pass all the checks, then smaller parent blocks or subblocks can be extracted from the same machine file, keeping the underlying model intact. Generating outputs from the machine file reduces modelling time, compared with retraining the machine learning model in order to produce a different blocking size in the resultant block model. For example, geologists often build subblocked models to better reflect geological boundaries, whereas mine planners often require regular blocks for mine optimisation.

Now, both subblocked and regular models can be extracted from DomainMCF, ensuring consistent output from an auditable model file.

The 2023 release of DomainMCF will provide even greater user control over the modelling process.

Previously, DomainMCF showed the estimated run time for the modelling process and then provided a hard stop if it reached double the estimate. This was designed to protect users from unexpectedly draining their subscription account balance.

When the hard stop condition eventuated, even when the status bar indicated the modelling to be temptingly close to completion, the process was automatically cancelled and the elapsed compute time added back to the subscription balance. Now customers can set their preference to override the 2x time limit and keep processing, and if they elect to do so, set an upper limit for the job duration.

In 2021 DomainMCF introduced geological domain uncertainty, a useful feature allowing geologists to view areas of the deposit where machine learning was not confident of predicting the correct domain.

This typically occurs when there are several domains in close proximity without a clear geological hierarchy. However, when data is sparse on the margins of a model, geological boundary confidence is often deceptively high as there are no other domains nearby.

Now DomainMCF provides an option to assess sample point distance and save this as a separate variable in block model outputs. Sample point distance measures the distance from the block centroid to the nearest input sample point, and in combination with the domain boundary confidence provides a better measure of the certainty of the domain prediction.

The enhanced DomainMCF will be available for download from Maptek Account early in 2023.



(L-R) Regular model, 1/4 subblocked model and more detailed blocking schema flexibility allows geologists to choose block size for output models after machine learning has been completed

## Integrated stratigraphic planning

Customers who want to interactively and dynamically design an open pit will welcome the latest integrated stratigraphic planning tools from Maptek™.

Functionality recently released in Maptek<sup>™</sup> Vulcan<sup>™</sup> allows geologists and engineers to change batter angles and berm widths, insert ramps, and make highwalls, pits and dumps on the fly.

Users can therefore very quickly build a pit in the right place, and in the right way, using a familiar Vulcan experience as they are guided through an easy-to-follow workflow for open pit mine planning.

Miners of coal deposits and any operations working to horizons will benefit from the real-time interactive approach, with pits updating dynamically as parameters change in the setup panel.

Existing modelling can be incorporated directly into the design as grids or triangulations, in addition to bench levels, and Maptek has automated the ability to start the base of the pit on a preferred horizon floor.

The new option is eminently suitable for dynamic dump design and handles open strings representing strip or block-based highwall profiles.

The ability to insert ramps into the design and interactively control the start, end and switchback locations greatly enhances the optimal positioning of access routes to the designed pit.

Once a preferred design has been created, a snapshot of the design at that point in time can be saved as a layer or triangulation for later use.

#### Interactive pit and highwall creation

The jewel in the crown is the interactive Create Pit/Highwall option which takes the direct output of the geological modelling and makes it available for pit or highwall creation.

Entire pit shells or individual highwalls can be made based on seed strings or polygons.

This then directly feeds into the Pit Topography and Pit Splitter functionality, resulting in fully attributed solids based on Pit/Strip/ Block/Bench/Horizon ready for reserve reporting, direct use in Maptek scheduling products or tailored export to third-party schedulers.

The development roadmap for integrated stratigraphic planning includes HARP models with stored attributes such as batter angles and berm widths, enabling geotechnical analysis.

Key points

- > A whole new approach to stratigraphic pit design
- > Pit design dynamically updates as parameters change
- > Produces fully attributed solids ready for scheduling



## Geology champions win on innovation

Creating alternative geological models to better understand water-bearing structures on a disseminated nickel deposit has won the 2022 Maptek<sup>™</sup> Geology Challenge.

IGO Senior Resource Geologist Cathy Barton had been intrigued that she and a geology colleague interpreted alternative orientations for pegmatite intrusions despite working on the same data. She also hoped to gain insights into the uncertainty of the location and thickness of the pegmatites.

Barton, who won a batch of Maptek<sup>™</sup> DomainMCF hours for her company alongside a personal prize, said finding a simple solution in DomainMCF made it practical to produce alternatives quickly, boosting confidence in existing models and highlighting areas needing review.

Barton described her data as 'distressingly real', comprising 1885 diamond holes drilled from surface and underground in widely varying orientations and directions by multiple owners over 30 years. Spacing ranged from 100 m with no sign of economic mineralisation to 15 m in some mineralised areas.

'It was easier getting started in the software than I thought it would be, even though I had not used Vulcan GeologyCore before. DomainMCF was very easy to use,' Barton said.

With domains categorised and data validated, the job was submitted to DomainMCF using the lithological grouping as the domain and six elements to estimate grade trends.

In 30 minutes and 45 seconds DomainMCF produced an alternative geological model that honoured the drilling data and correlated well with the implicit model.

Barton appreciated that DomainMCF can be used as a validation tool for geological modelling, for example, highlighting areas where a vein model may be incorrect due to the modeller's interpretation of the orientation. She also noted that DomainMCF helped in modelling intricate isoclinal folding as well as large regional faults.

Barton plans to use the DomainMCF machine learning hours to help review several different resources.

#### Innovative applications

Yerniyaz Abildin, University of Adelaide postgraduate researcher won second prize for a study that compared explicit, implicit and geostatistical modelling with the machine learning approach.

Abildin noted the main advantages to be the 'stunning' speed of cloud computing and user-friendly domaining tools.

'DomainMCF produced the result extremely fast – the run time exceeded my expectations by around ten times,' Abildin said.

'The interconnection between Maptek products is beneficial. It is easy to open the block model produced by DomainMCF in Vulcan and then analyse the results against previous models,' he added,

Third prize was awarded to John Florek, Principal of Apical Exploration, who ran DomainMCF on a series of diamond drillholes for a high-grade gold deposit, to see whether incorporating different geological trends and categorising them as a domain variable gives more geological control over the model.







geologists years to develop comparable models,' Florek said. Florek commented favourably on the

'The Maptek solution allowed a fresh new

perspective to the deposit that we will be

exploring. Trends that were not identified,

ability to model domains with known structural controls for mineralisation, noting that it allowed him to create several models, and test them during exploration drilling.

Other benefits for projects include allowing quick evaluation of known deposits without the bias of earlier workers.

'I could independently evaluate whether a property has higher or lower potential than what is being promoted. It's a great tool for institutional investors,' Florek said.

Maptek Senior Technical Lead Richard Jackson was impressed with the breadth of applications from entrants this year.

'The three winning submissions are great examples of how DomainMCF can be applied to very different problems, all gaining a little more insight into their data and adding value to the vastly different problems being tackled. It truly was a challenge of more than just domains!' Jackson said.



## Unfolding the potential of modelling

Maptek<sup>™</sup> technical staff used their imaginations to stretch the potential of DomainMCF for improving geological modelling outcomes.

Maptek<sup>™</sup> DomainMCF Team Leader Andrew Myers won the inaugural staff geology challenge for a project that explored whether incorporating unfolding into the modelling process would improve resultant models.

A staff category held alongside the external Geology Challenge competition in November attracted entries from software engineers, geologists and a mining engineer.

The challenge was to exploit the machine learning smarts of DomainMCF by applying it to previously unsolvable problems.

Myers devised his project on 'Bending DomainMCF' to discover if the modelling engine could be used to model coordinates, and if so could that outcome be used to define coordinate transforms.

Noting that DomainMCF can model the trend of a transformation, Myers found it tends to over-smooth surfaces. He then wrote an 'Unroll Surface' script that delivered an incremental unfolding mechanism.

'I was surprised that I got close to what I wanted to do. My next step is to investigate whether the new approach to unfolding has potential for evolving into a new tool in Vulcan GeologyCore,' said Myers.

Another software engineer entry applied DomainMCF to generate 2D images and animations, revealing that the engine does not need to use all the data; a random 80% sampling gives similar results to using 100%. Turning to the geologists, Steve Sullivan tackled preparing oriented structural measurements for incorporation with drill and sample data as input for domain modelling. What surprised him was how difficult it was to take seemingly simple data and develop a process to make it usable in DomainMCF.

'One learning of my presentation was to trigger development of userfriendly tools to achieve the same or better outcomes!' said Sullivan.

In another geology-focused presentation, Senior Technical Lead Richard Jackson investigated whether incorporating an additional domain model that stores structural anisotropy can inform the modelling.

He concluded that DomainMCF is successful where data is 'less' and geology more complex, making better models that use more of the geological information already available to geologists.

Jackson initiated the geology challenge concept in 2021 and is impressed with the enthusiasm of customers and staff.

'The ability to view data in both folded and unfolded space in such an easy manner is a very exciting prospect,' he said.

The outcomes from the internal challenge highlight how far the DomainMCF engine can be stretched when users think outside the box.







## Sharing the future

Maptek<sup>™</sup> partnership with SEG creates tomorrow through sharing information from real world professionals to help geology graduates improve their future.

Geologists learnt about geological modelling fundamentals, machine learning and big data, and the future of technology in the field of economic geology through a series of webinars presented by Maptek<sup>™</sup> and the Society for Economic Geologists (SEG) during 2022.

Maptek partnered with the society to deliver the Exploration and Technology webinar series, as part of SEG's remit to advance the status of the profession of economic geology, and to maintain a high professional and ethical standard among its members.

The first webinar saw geologists Mary-Anne Hildebrandt (then Victoria Gold Corp.), Carlos Vargas from Barrick Gold Corp. and Jake Anderson from Maptek outline how to leverage technology to get the best geological modelling results.

In July, Maptek Geologist and Technical Lead Steve Sullivan, Dr Penny Stewart, Mining Engineer and CEO of Petra, and Antoine Cate, Structural Geology Consultant with SRK Toronto, presented 'Introduction to Machine Learning and Big Data' to explain the latest exploration tools and their various applications.

The 2022 series wrapped up in November, with Stephanie Mills from Utah Geological Survey, Jesse Clark from Nevada Gold Mines, and Liz Stock from Barrick leading the discussion around how technology is changing exploration and production methods, and how geologists can stay ahead of the curve in their careers.

Maptek Technical Services Manager & Training Program Lead, Maureen Moore, an experienced geologist and SEG member, moderated each session.

She said that Create Tomorrow was a core Maptek principle that encompassed supporting mining professionals, encouraging new thinking and change, and sharing information for mutual benefit. 'It was great working with mining professionals across the industry to curate the webinar series. I found it extremely rewarding to discuss experiences, current topics, and themes in mining and technology,' said Moore.

Strategist for Education and Training at the Society of Economic Geologists, Duncan Proctor is grateful for Maptek's support.

'We have certainly appreciated Maptek's generous partnership over the past year, allowing us to provide informative content free of charge on several key themes to a global audience of students and early career professionals,' Proctor said.

'SEG looks forward to future collaboration with Maptek and continued virtual outreach in 2023.'

Maptek and SEG have recently announced they will continue the partnership in 2023, with webinar topics to be announced soon.

#### Panelists for the Exploration and Technology SEG 2022 webinar series



## Rethinking design in development

Maptek<sup>™</sup> staff challenged themselves to think about solution design and development differently in line with our principles to be courageous and walk in our customers' shoes.

The first Maptek<sup>™</sup> Design Challenge encouraged developers, product strategy managers and designers to rethink the way they approach problem solving.

In Adelaide, South Australia, teams comprising staff across different roles spent a day tackling various problems with a view to creating great user experiences when designing solutions, rather than purely focusing on features and functionality.

Team Zinc took out top spot for a data analysis solution for a mine scheduling problem in Maptek Evolution.

Subject matter expert (SME) and Senior Mining Engineer Allan Kerridge expressed how even current scheduling problems are too large for a single person to hold in their head. Data analysis is a hugely important component of all Maptek products, with the type and frequency of data collected only increasing.

Team Lead Luke Berry said they found it invaluable to consider design features in depth with SMEs during the challenge.

'We chose to tackle iterative processes as they are a key enabler for customers working through scenarios towards the optimum answer,' said Berry.

Team Zinc found that value can be added by identifying and showing the right piece of information at the right time, but true customisability will always provide additional value.

The team created a timeline view of all changes made throughout the Evolution scheduling processes and made it highly customisable, allowing users to track changes in key values while working towards their outcome. Organisers of the design challenge on the day, Global Development Strategy Manager Will Reid and Global Design and Brand Manager Simon Hanson reported favourably on the process and the outcomes.

'This workshop represented an opportunity for many sides of the Maptek business to get together in the same room and explore new ideas. It yielded several solutions that otherwise would not have been considered,' said Reid.

'I was interested to see the mixture of ideas – some were big and others could be classed as small quality-of-life changes – that can be easily implemented for potentially large positive impact for customers,' added Hanson.

Maptek plans to run additional virtual and hybrid multidisciplinary design workshops in other regions, with the outcomes to ultimately benefit the Maptek global customer base.





Team Zinc winners (L-R) Allan Kerridge, James Gaskell, Zenhai Yao, Martin Davis, Luke Berry

## Relationships for the future

Maptek<sup>™</sup> values industry and community relationships, exhibiting at a Colorado high school careers fair and sponsoring university mining games in Western Australia.

#### Colorado careers fair

Students and fellow presenters flocked to the Maptek<sup>™</sup> display at the recent Future Fair exhibit at Golden High School, Colorado.

Students were able to explore careers in science, technology, engineering and mathematics, creating excitement about their plans after high school.

Chris Johnson, Cesar Carrasco and Nate Bazar from Maptek staffed the interactive exhibit, featuring a 3D laser scan of the school and 3D printout of Dan the school mascot.

The Future Fair was a fantastic opportunity to engage with the next generation of engineers.

'The young people I spoke to were considerate, intelligent and extremely driven,' Johnson said.

'I was impressed with the diversity of the crowd as well. When this generation hits industry, we'd better all hold on to our hats. They are going to bring it!' she added.





#### National mining games

Maptek<sup>™</sup> was proud to support students who competed in the 2022 National Mining Games in Perth, Western Australia.

The National Mining Games, held at the conclusion of the New Leaders Summit, is an adaptation of the International Mining Games. More than 100 university students from around Australia competed in a range of 'old school' mining events.

The University of Western Australia won the men's competition by a large margin, and mixed games by one point. The University of Queensland topped the women's leaderboard.

The competition aims to enhance comradeship of Australian mining students and remember miners who have lost their lives.

Maptek sponsored the Survey competition which involved teams of up to six members approximating a location by running coordinates through survey stations.

A Gala dinner wrapped up the games, providing additional opportunities for students to build connections with industry and Maptek staff.

Head of Customer Experience Mike Husbands enjoyed meeting students from interstate universities.

'Maptek already has strong relationships with mining-related faculties in the Australian states where we have offices, so this was a good opportunity to hear from a wider range of undergraduates about their studies and career plans after university,' said Husbands. Student mining engineer and Vice-President of the AusIMM Student Chapter, Yash Ambre said that the mining games provide a great environment for organisations to interact with future industry talent.

'Our industry often struggles to attract and retain talent, so we need to create additional incentives and opportunities for entry level professionals. And of course the biggest benefit for a mining games participant is to have fun!'

The WA School of Mines will host the 45th International Intercollegiate Mining Games in Kalgoorlie in March 2023.





## Donation invests in mining engineers

Maptek<sup>™</sup> has donated 29 high-performance laptops for Minerals and Energy Resources Engineering students at the University of New South Wales.

Earlier this year Maptek donated more than \$100,000 to fund the purchase of laptops that are loaned to the third and fourth year mining engineering students to facilitate hybrid learning.

Many students were studying from home or working remotely during COVID-19, which restricted their access to high performance computers and industry programs.

Professor Maurice Pagnucco, Deputy Dean of Engineering, expressed his gratitude for the donation to Maptek representatives Peter Johnson, Keith Lee, Daniel Lewis and Mike Winfield.

'Thanks to Maptek, our students will now be able to access programs remotely. This will significantly improve the teaching and learning experience of all students,' he said. Fourth year mining student Phoebe McAuliffe affirmed this: 'These laptops will be around for years, helping multiple cohorts of students. It will make their lives easier and will allow them to engage with the software on a much higher level.'

Professor Ismet Canbulat, Head of School of Minerals and Energy Resources Engineering, reiterated a quote that has always resonated with him.

'Our most valuable commodity is not oil, not gas, but people. That is why we need to invest in people and equip our engineers with the best possible tools and technology.'

Professor Serkan Saydam of the School of Minerals and Energy Resources Engineering thanked Maptek for the generous donation and tremendous support over the years. 'We have had an excellent relationship with Maptek for over 20 years as a research partner, conference sponsor and provider of lectures and training on campus and online.'

Earlier this year, Maptek Chairman Peter Johnson attended an award ceremony at the School of Minerals and Energy Resources Engineering. He spoke to several students about the challenge of accessing programs remotely.

'Maptek Account licensing is a key enabler to facilitate remote learning and access, making it easy for users to operate the latest Maptek software anywhere, any time. Our close relationship with the School made it easy for us to help.'

'Students are the future of the industry. We're happy to do what we can to facilitate their success,' said Johnson.



Maptek chairman Peter Johnson receiving the donation acknowledgement from UNSW Professor Maurice Pagnucco



Staff and students of the School of Minerals and Energy Resources Engineering with Maptek representatives at the event





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