Glencore, Kidd Operations Case Study

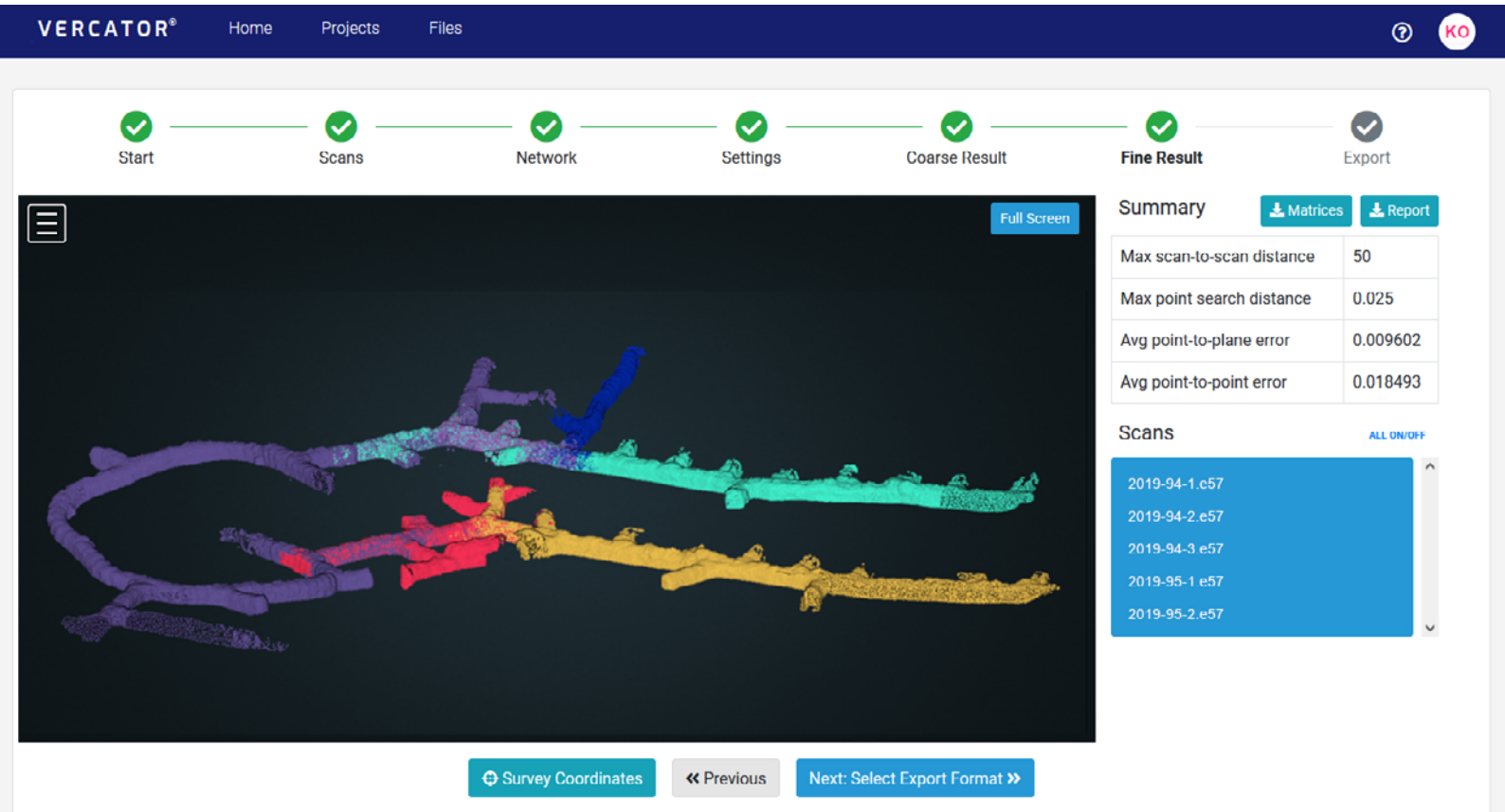
Automating hybrid registration for the world's deepest zinc-copper mine

Glencore is one of the world's largest natural resource companies and their Kidd Operations mine in Timmins, Canada takes a progressive approach to applying cutting-edge technologies for workflow optimisation. They have a long-term vision for a fully digitized 'live view' of their operations. The merging of all their historical and newly created LiDAR datasets onto a common coordinate system is the first waypoint in realising this.

Kidd Operations in Timmins, Canada deploys many technology platforms for LiDAR data capture purposes. Each one in isolation has its own 'siloed' software workflow but none can produce a single hybrid dataset without significant manual effort.

The Vercator® cloud was built to automate exactly this issue. By utilising the power of cloud computing it offers distributed point cloud processing to users wherever they are in the world.

Kidd Operations immediately saw the benefits of the Vercator cloud in their initial trial and suggested a couple of key enhancements to enable their process of registering hybrid data from natural tunnel environments – a challenging data type.
Three primary data capture techniques deployed include aerial-SLAM LiDAR, handheld-SLAM LiDAR alongside static LiDAR. Creating a homogenous hybrid cloud from these varied capture devices was the first hurdle for the Vercator algorithm to overcome. Many of the historical data sets have capture dates of several years previous. The physical conditions at the deepest levels (9900ft, just over 3km) of the Timmins Operation mean that temperatures can easily be in excess of 35°C. At these extreme depths, the ground stresses cause the rock to behave differently to at the surface, taking on a degree of plasticity.



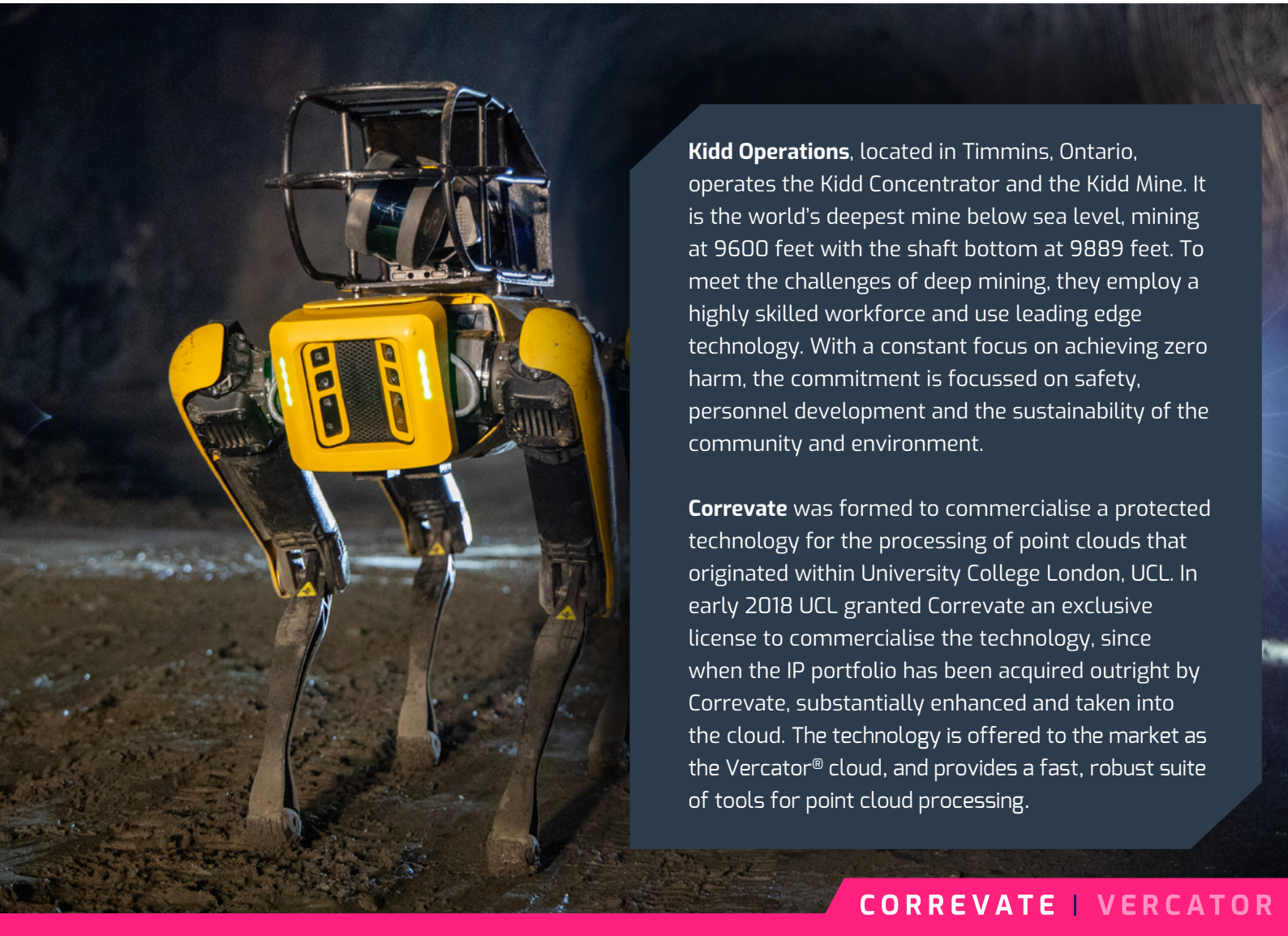
Despite the many outlined challenges in the data itself, the enhanced Vercator algorithm easily aligned these data sets. Kidd Operations benefited from its relationship with Correvate; as a research-intensive start-up, as Correvate were able to apply that research into the Vercator commercial product in a short-time frame, ultimately providing Kidd Operations a market-leading workflow.

Glencore Kidd Operations supported the acceleration of these beneficial enhancements, with the Manager for Mine Technical Services, Iain McKillip stating ***'the matching is excellent, so much so that the drift of our scanner is becoming much more evident! We will likely adapt our tools to take better advantage of the matching potential.'***

Looking Ahead

We maintain a strong developmental relationship with Kidd Operations, with further optimisation a possibility as the 'live view' project realises.

Try the Vercator cloud for yourself, or if you have a workflow challenge which would benefit from an acceleration project, why not have a chat with us?



Kidd Operations, located in Timmins, Ontario, operates the Kidd Concentrator and the Kidd Mine. It is the world's deepest mine below sea level, mining at 9600 feet with the shaft bottom at 9889 feet. To meet the challenges of deep mining, they employ a highly skilled workforce and use leading edge technology. With a constant focus on achieving zero harm, the commitment is focussed on safety, personnel development and the sustainability of the community and environment.

Correvate was formed to commercialise a protected technology for the processing of point clouds that originated within University College London, UCL. In early 2018 UCL granted Correvate an exclusive license to commercialise the technology, since when the IP portfolio has been acquired outright by Correvate, substantially enhanced and taken into the cloud. The technology is offered to the market as the Vercator® cloud, and provides a fast, robust suite of tools for point cloud processing.