

From paper to bytes; Digital mapping implementation

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ABSTRACT

The use of photogrammetry has greatly increased the accuracy of 3D mapping underground. However, this has not reduced the need or desire for geologists to produce plans or sections showing an interpretation of the mapped geology.

At the Waihi Underground Gold Mine a hybrid solution has been developed that utilises the accuracy of photogrammetry and mapping onto face photos with the CAD-based Deswik geo.tools functions to create plan and section maps. These have the benefit of looking like traditional paper maps but are also spatially accurate and richly attributed with metadata that can be filtered and exported to downstream processes.

Deswik geo.tools is a tablet-based solution that allows the geologist to map digitally with a stylus. Automation is utilised for the updating of survey as-builts, approved designs, drill holes, geological mapping, vein interpretations and mine work areas, reducing the requirement to print out maps at various locations and scales. Having 3D mine software on a tablet device provides a wealth of features not available when using paper: scaling is a problem of the past; information can be turned on and off; features can be viewed and measurements between points of interest calculated in 3D space, for example, between vein wireframes and drill hole sample information.

A suite of custom scripts have been developed that take the spatially accurate, registered and attributed polyline data from photogrammetry scans and converts them to a geological mapping legend with vein textures, structural information, and lithological boundaries. These 3D maps can be plotted in plan or section view and satisfy the requirements of the most ardent paper map supporter.