**Vulcan Minemodeller Underground**

Vulcan MineModeller Underground allows engineers to design, evaluate and maintain daily underground mine operations. Users can generate different designs for each mining scenario, evaluating and comparing results.

### Base Modules

**Triangulation**
- Create/edit 3D surface and solid triangulations
- Generate contours
- Register images with triangulations for better visualisation

**Vulcan 3D CAD**
- Design and digitise lines, polygons, points and text
- View, analyse, interactively edit 3D data

**Data Transfer**
- Import and export data between Vulcan and other applications
- ODBC connection to SQL Server™, Oracle® and MS Access™

**Plotting**
- Configure user-defined plot style sheets with title blocks and user prompts
- Edit and regenerate plot files
- Set up and generate single plots using a wizard-style interface
- Generate multiple plots with batch-style interface using existing data specs

### MineModeller Underground Modules

**Grid Modelling**
- Define surfaces as grid models
- Perform complex grid to grid operations
- Create stratigraphic, structural and grade/quality grid models using an automated modelling process
- Generate and analyse reserves by overlaying polygons onto grids to create reserve limits

**Statistics**
- Statistical analysis of Vulcan databases, grids and block models
- Automatically output results and charts in Microsoft® Excel™

**Block Modelling**
- Store and use information via regular cells or subcell geometries
- Conduct inverse grade estimation
- Support large number of blocks - add, delete or modify variables in real time
- Create custom reports, including grade tonnage curves

**Mine Design Underground**
- Design ramps, developments, stopes, construct/edit surfaces, solid models
- Optimised design of blocks for cut and fill, sub-level stoping, room and pillar mining methods
- Inverse distance routines for creating grade models
- Preview designs before applying settings
- Design declines with intermediate access points using the automatic Ramp tool
- Interactive ramp editor allows independent modification of ramp sections
- Transition gradient can be specified at the start, middle or end of the ramp

### Add these modules

- Channel Sampling
- Interactive Polygon Reserver
- Drill & Blast Design
- Survey
- Stope Optimiser