Three-D is the world's foremost open pit optimization program. As miners know, the difference between a good pit design and a bad one can financially translate to millions of dollars. So a program which determines the best shape and size of a mine is more than just an engineering tool, it's a business essential. The Whittle Three-D program increases confidence for designers, managers and shareholders by greatly reducing the risk of human error. It is simple to use, much faster than manual design methods and operates in conjunction with any Generalised Mining Package.

How Three-D works.

Using the information assembled during exploration, Three-D mathematically determines the right shape for the mine by balancing the cost of mining waste blocks against the current value of ore blocks together with the pit slope requirements. It will then give you a three-dimensional design of the pit you will need to reap the optimal mineral and financial rewards. It will also demonstrate how much the mine is returning at every stage of the project and can indicate the most economic point at which to proceed underground. Three-D is best suited to mines which will have a relatively short life of 2-3 years as it is based on current prices and costs.

What it can do.

Three-D can automatically generate multiple phases using a data-limiting method which can act as a guide to designing push-backs. It will produce realistic pit shapes based on the complexity of pit slope constraints and will automatically generate a report detailing the accuracy of pit slope models. If the mine interferes with existing features such as a processing plant or roads, the program will assess the feasibility of relocating the obstruction by weighing up the economic impact of the move. As well, Three-D can make allowances for the manipulation and combining of block models prior to processing. Scripting facilities are available in all programs. This versatile program can run on a wide range of PCs and Unix workstations and, by utilising hard disk and virtual memory, any size computer can handle the input. As you are able to break up the calculation of very large models into manageable pieces through re-start and crash protection features, Three-D can analyse any size mine.

Three-D

MINING OPTIMIZATION SOFTWARE

HARDWARE PLATFORMS

IBM compatible PCs. The minimum requirement is a PC 386 with 4MB of memory, a maths co-processor and 50MB of free disk space. The preferred specification would be a fast 486DX, or better, 8MB of memory and 100MB of free disk space. The programs will run under DOS and in DOS windows under Windows 3.x, Windows NT, Windows 95 and OS/2.

Unix workstations. In general, workstations have adequate memory and hard disk space so that the above specifications are not relevant. Supported hardware includes: DEC Alpha, DEC Ultrix, HP-UX, SGI Irix, Sun Solaris 1 and Sun Solaris 2.

INTERFACES

Bi-directional interfaces exist between Three-D and DATAMINE, GDM, GEMCOM, GEOSTAT, MEDSYSTEM, MICROMINE, MicroMODEL, MineScape/MineStar, SURPAC and VULCAN. Other interfaces are easy to create because all Whittle input and output files are text files.
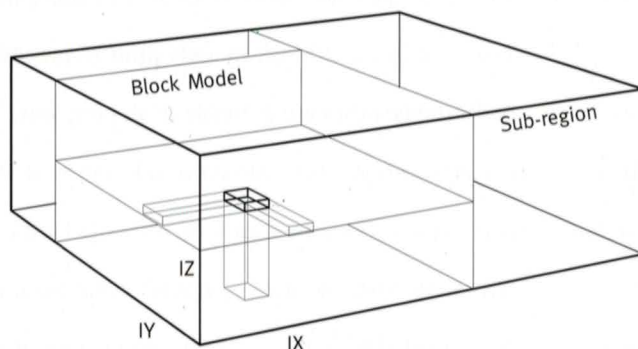
CAPABILITIES

- Model size 999 x 999 x 999 blocks • 20 Sub-regions
- 8 Slopes within a sub-region • 40 Mining phases
- Lerchs-Grossmann 3D optimization • Log files
- Reblocking and general model manipulation
- English and Spanish interfaces

EXAMPLES

Based on block values and required pit slopes, Three-D shows which blocks must be mined to obtain the maximum total cash flow. It is ideal for mines with a life of two to three years.

By varying the block values it can be used for risk analysis, sensitivity analysis and evaluation of the costs of relocation of plant and infrastructure.
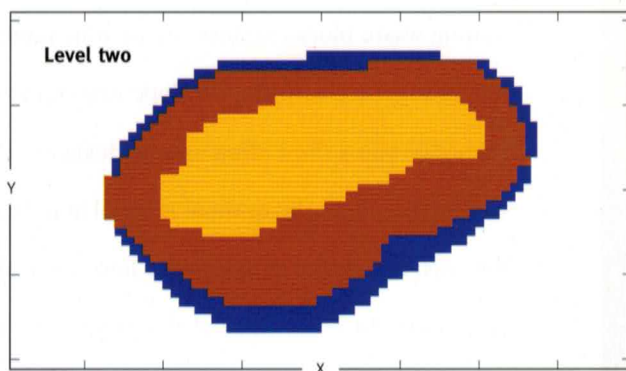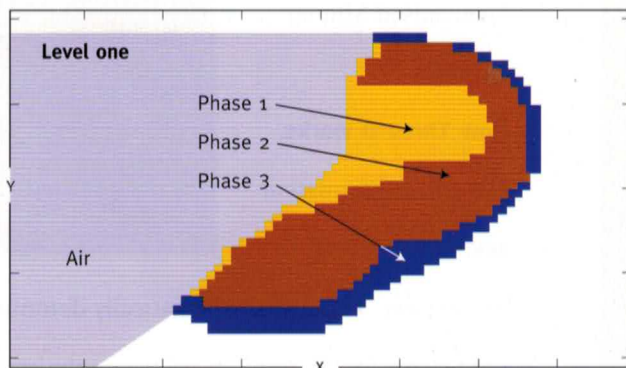
Whittle Programming Pty Ltd

There are many technical papers and case studies on the use of Whittle software. Request literature from:
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