

e Production

**YEARS OF EXPERIENCE** 

**MORE THAN MINING PROJECTS** 

to Leach from Mine

to GE from Starts Ore to GE from Mine

Ore to Mill from Stocks Ore to Mill from Mine

> MORE THAN **WORLDWIDE ACTIVE USERS**

20

OPTIMISING THE WORLD'S MOST COMPLEX MINING ASSETS FOR OVER 15 YEARS.

www.cometstrategy.com



COMET Strategy Pty Ltd focuses solely on value creation through the provision of tools, expertise and training for strategic analysis in the mining industry.

# COMET

In the 18 years since its initial development, COMET Optimal Scheduler has been used on more than 80 of the world's most valuable surface and underground mines and it is now running in excess of 100,000 scenarios each year for projects located in countries such as; Australia, Brazil, Canada, Chile, Mongolia, PNG, Philippines, Peru, South Africa, USA, among others.

COMET Optimal Scheduler is an advanced multi-policy schedule optimisation tool developed to optimise both single mine and complex combinations of surface and underground mines using common infrastructure. The objective of each optimisation is to maximize NPV, taking into account productivity, operational constraints and economic conditions that may change throughout the life of the project.

# CONSULTING

COMET provides tailored consulting services to mining professionals to complement the optimisation tools. Together with our clients and optimisation tools, focus on increasing shareholder value by discovering the value potential from each resource.



Our algorithms are unique in how they simultaneously optimises multiple policies such as pushback/strip sequences, variable processing cut-off grades, haulage to multiple destinations, stockpile creation and depletion, process recovery (throughput/recovery relationships), multiple ore types and any number of processing facilities and methods.

COMET Optimal Scheduler is used on many different types of projects including; copper, gold, silver, platinum, uranium, bauxite, coal, iron, diamonds, nickel, zinc, and molybdenum.

COMET ONE is the new on-line schedule optimisation tool designed to simply and freely help students understand how to find and exploit the value drivers of a mine. This is one way for COMET Strategy puts back into the next generation of mining professionals.

# COMET

COMET Strategy provides a range of training courses including:

- Mine Planning and Strategic Analysis
- Mining Economics Foundations
- COMET Software Foundations
- COMET Software Advanced Applications
- COMET Software Distributed Processing
- COMET Software Medium-term Scheduling

## **SOFTWARE**

#### **FEATURES & CAPABILITIES**

COMET Optimal Scheduler is an advance strategic mine analysis tool, for advanced and experienced mining engineers.

This tool therefore is mainly used by the project evaluation teams from most of the Tier 1 mining companies in the world, with the common goal of maximising the total business value of a set of mining assets using the NPV.



### LONG TERM SCHEDULING TO MAXIMISE FULL NPV

Optimised mine plans that maximise the full NPV from all periods to meet all project and operational constraints, including economic conditions that change with time.



## VARIABLE CUT-OFF GRADE OPTIMISATION

Determine the optimum cut-off grade per period, per ore type and for each processing destination for your strategic and long term mine plans.





#### INTEGRATED OPEN PIT & UNDERGROUND OPTIMISATION.

Optimise projects that have open pit and underground operations using common infrastructure and constraints. Optimise to determine the extraction sequence of each region and the scale and timing of capital expenditures.



## STOCKPILING & REHANDLING

Improve the utilization of your resource when maximising the value of your project using our automated stockpiling and reclaiming capabilities.





### PROCESSING FACILITIES OPTIMISATION

Select the optimum processing method and processing capacity for your project or operation.



#### MULTIPLE PROCESSING DESTINATIONS OPTIMISATION

For projects and operations with multiple processing methods, COMET will optimise the production schedule by sending material to its optimum economic processing destination, to maximise NPV of the project and to fulfill the processing capacities and constraints.



#### MULTIPLE OPEN PIT OPTIMISATION

Optimise one or multiple open pit projects/operations with multiple phases in parallel or in series to maximise the overall NPV of your assets.







#### GRINDING & RECOVERY OPTIMISATION

Exploit mill throughput and recovery relationships with the cut-off grades to further improve the project value without significant capital expenditure.



Achieve blending targets for product control and maximisation of recovery.



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# INFRASTRUCTURE & OPERATIONAL EXPANSIONS (CAPEX) OPTIMISATION

Optimise multiple infrastructure and capital expansion scenarios simultaneously.





#### TRUCK & SHOVEL FLEET OPTIMISATION

Define the size of your truck and shovel fleets per period, and for the entire life of asset (LOA) in your optimum mine plan.

#### ENGINEER DEFINED REPORTING & EXPORT FUNCTIONALITIES

Create Financial, Production and Technical reports as detailed or as simple as required.





#### CLOUD BASED MULTI SCENARIO OPTIMISATION CAPABILITIES

Use our cloud based capabilities to evaluate as many scenarios as the project and engineer needs in a swiftly, efficient, and simple manner.

#### MEDIUM TERM GUIDANCE

Optimal and operational medium term mine plans to guide in a strategic manner the medium term mine planning engineer.





#### SUITABLE FOR MOST MINING PROJECTS

Copper, gold, silver, platinum, uranium, bauxite, coal, iron ore, diamonds, nickel, zinc, and molybdenum.

# **CONSULTING**

COMET Strategy offers a combination of software, operational and experience together with inherent value understanding.

All of these together can make the difference of the success of any mining project:

# ptimisation ptimisation 5% to 15% AN



Understanding Value
50% to 200%
A

Develop the optimal production schedule of an open pit, underground or combination of both, using our state of the art and worldwide recognised strategic mine planning COMET Optimal Scheduler.

Realise a large number of sensitivity and risk analysis using the flexibility and capability of COMET Optimal Scheduler.

# R&D

#### Research and Development

#### SOFTWARE DEVELOPMENT

When very particular complexities are to be modeled and optimised, COMET Strategy has all the capabilities and experience to create new 'Custom Functions' and software to tailor the model as close to real to the operation or project to be studied. The most famous Custom Functions or algorithms include:

- Fleet Replacement
- Grinding Adjustment (Grinding Versus Recoveries).
- Incremental Distance to Waste Dump (Waste Dump Optimiser).

#### **GRADE ENGINEERING**

COMET Strategy is currently working in collaboration and as a member with CRCORE on the Grade Engineering Program, with focus in Mine Planning Optimisation with Grade Engineering Techniques.

Grade Engineering Techniques include: Sensor Based Sorting (Bulk Sorting and Particle Sorting), Differential Blasting (Induced Deportment), Grade by Size (Natural Deportment), and Dense Media Separation (DMS). COMET Strategy is the first company with CRCORE to create a full optimisation to the Long Term Mine Plan of an operating mine with Grade Engineering Techniques. Please visit our website to download the technical paper.

Create Audit reports for thirds parties (non-mining engineers) to confirm confidence and operability of a mining project.

Realise Peer Reviews and Due Diligence studies. Participating in independent reviews of investment proposals.

If you are already a COMET Optimal Scheduler user, we can help and assist you to get the most out of your software and asset.



#### KEN LANE'S BOOK

COMET Strategy bases a large part of its work, research and development, on Kenneth F. Lane's Cut-Off Grade theories. Lane's theories and work have been the base and foundation for strategic mine planning worldwide for the last century. COMET Strategy has recently released the latest edition in two languages; English and Spanish.







Coal Diamond Copper

Gold Silver Iron Ore

Bauxite **Uranium** 8 **COMET Support** 

#### LONG TERM CLIENTS



**GLENCORE** 





















