Resource Estimation and Evaluation with Surpac

Presenter:
Rowdy Bristol
Kahan Cervoj

The Course
This practical 4-day course uses a real-life data set to cover the resource evaluation cycle and its requirements. You will learn the key concepts related to the processes from data collection and quality assurance through to classification. These concepts are reinforced through a large number of practical activities, all using Surpac on a real-life data set. This course has been drawn from industry best practice and twenty years of estimation experience with Surpac.

This course has a 32 PD HOURS AusIMM rating

Course Outline
- Introduction – flow of tasks, key Surpac concepts
- Data quality – using Surpac to perform validation checks on input data
- Geology and Domaining – geology of a real-life data set, basic wireframing techniques and validation, assigning domain codes to drillholes
- Data preparation – compositing within domains, validating composites
- Statistics – understanding and reporting statistical parameters, topcutting
- Continuity – understanding and modelling variograms, using variogram maps to develop anisotropy ellipsoid parameters
- Estimation – understanding different techniques, using Surpac to perform estimates, optimising estimation metrics (e.g. block size, number of samples)
- Validation – using Surpac to validate a model against input data
- Post-processing – understanding change of support and recoverable resources
- Classification and reporting – understanding the Codes, using Surpac to assess and assign classification categories
- Risk and uncertainty – understanding the basics of simulation, and when it is useful
- Reconciliation – using Surpac to validate a resource model against grade control data

Outcomes
During the course attendees will:
- Understand the workflow required to create, validate, and classify a resource in Surpac
- Learn how to use Surpac to create and validate geological domains
- Understand how to create composites from raw sample data in Surpac within a domain
- Learn how to report and analyse statistical properties of a data set with Surpac
- Use Surpac to identify and perform topcuts
- Understand how to use Surpac’s variogram maps to define anisotropy ellipsoid parameters
- Use Surpac to perform several different types of estimations
- Learn the many ways to validate a resource model using Surpac
- Appreciate the key criteria for resource classification, and how to use Surpac to assign resource categories

FREE OREpack software
Optiro has developed add-on software modules which will improve your efficiency and offer functionality beyond Surpac’s normal functionality. All attendees will receive a free copy of the OREpack Declus Optimiser, and a 30 day trial of any one of these OREpack modules for Surpac: • Kriging Neighbourhood Analysis • Localised Uniform Conditioning • Drillhole Spacing Optimiser • Estimation Manager

Surpac Geology Fundamentals
If you need to learn the basics of how to use Surpac as a geologist, we recommend you attend the Surpac Geology Fundamentals course which is presented the day before this course.

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<th>Surpac Geology Fundamentals</th>
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5% discount when you book on more than 1 course
The Presenter

Rowdy Bristol  BSc (Construction Engineering), AAS (Land Surveying), MSc (Geological Engineering/Geostatistics), Post Grad Dip Computing

Rowdy is a geologist, engineer, and surveyor with postgraduate qualifications in geostatistics, and computing. Rowdy has more than 22 years' worldwide experience in the mining industry, and four years' experience working for a mining consultancy in the United States. Rowdy holds degrees in Geology, Surveying and Engineering, and has worked as a geologist, engineer, and surveyor. He has trained geologists, engineers, and surveyors in the use of Surpac Software at underground and open pit mines covering all major commodities. Rowdy's skills are in resource evaluation, geostatistics, training, mine geology, engineering, and surveying.

Kahan Cervoj  BAppSci (Geology), Post Graduate Certificate (Geostatistics), MAusIMM, MGSA

Kahan has, over his 26 year career, worked in underground and open-pit production, all facets of exploration, resource and project development, estimation, and geological management. A geologist with a focus on understanding of geology and using this understanding to guide resource estimation, he has worked in establishing systems and processes and in mentoring teams of people. His resource estimation and mining software skills are extensive and cover Datamine, Surpac and other specialised geostatistical software.

Who should attend?
This course is designed for geologists and mining engineers involved in resource estimation and evaluation using Surpac. We assume that you will be familiar with basic mathematical concepts, and you will have a basic understanding of Surpac databases, wireframing, block modelling, and macros. If you are unfamiliar with any of these areas, we highly recommend you attend the 1-day “Surpac Geology Fundamentals” course offered the day before this course. You do not need to know any geostatistics or matrix algebra!

Attendee Feedback

“I gained a good deal of value with Rowdy showing me various Surpac techniques”
“The practical exercises using the software were most useful”

What do you need to bring? What will we provide?
Attendees should bring a laptop with Microsoft Office and Surpac installed. Optiro will provide a course manual, a FREE copy of the OREpack Declus Optimiser and a FREE 30-day trial of your choice of one of the OREpack modules, activities and solutions, lunch and refreshments. A Surpac license can be provided for an additional fee.
All attendees receive a Certificate of Attendance.

Optional: If you would like to receive a graded Certificate of Assessment for your attendance of this course, you have the option of writing a post-course open-book exam in your own time. The Certificate of Assessment will form a valuable part of your professional development plan and CV. Please see registration form for more details.

TRAINING OPTIONS

If you are unable to attend the public training courses, you might prefer one of these Training options

In-house Courses
All our courses can be presented as in-house training at your office or anywhere in the world. This is a cost-effective training option if you have a group of people wanting training; plus we can tailor the course to your commodity or operation and use your data for the exercises and activities.

On-line Courses
If your personnel are unable to leave site to attend the public training courses, please contact Diana Titren to discuss the option of live interactive On-line training for your personnel.

Please contact Diana Titren, Training Manager, for more information dtitren@optiro.com
TRAINING COURSES 2017

PLEASE EMAIL YOUR REGISTRATION TO training@optiro.com

YOUR DETAILS:
Delegate Name: 
Position Title: 
Company Name: 
Address: 
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PLEASE SELECT COURSE/S AND DATES YOU WISH TO ATTEND

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Sub-TOTAL

Please choose ONE of these discounts

OR

5% DISCOUNT if you register on 2 or more courses

15% DISCOUNT for AusIMM members. Your membership number ____________

Optional:
POST-COURSE EXAM TO RECEIVE YOUR CERTIFICATE OF ASSESSMENT

The Certificate of Assessment exam is open-book and can be written in your own time.

Number of courses ____  @  $350 per Certificate of Assessment exam

Please fill in the amount

SUB-TOTAL

PAYMENT OPTIONS:

Electronic Transfer:
Bank: Westpac Banking Corporation
SWIFT Code: WPACAU2S
BSB: 036 073  Account: 322873

Cheque:
Cheque made payable to Optiro Pty Ltd

Book and pay online at: http://www.optiro.com/training/

Optiro Pty Ltd ABN 63 131 922 739
www.optiro.com

For more information or to reserve a place on a course, please contact: Diana Titren – Training and Marketing Manager
Tel: +61 8 9215 0000  Email: dtitren@optiro.com
In-house / On-site Courses
All Optiro courses can be presented as in-house training either at our offices or at your mine site. This is often a highly cost-effective way for you to train a small to large group of your personnel. The courses can be customised to suit your commodity and operation, and your personnel can use their own data for the practical work. Learn while they work!

Online Training
If your personnel are unable to leave site to attend the public training courses, please contact Diana Titren to discuss the option of live Online training for your personnel.

Optiro is a specialist resources advisory and consulting group
Our core services are:

GEOLGY CONSULTING AND ADVISORY
Mine geology and resource definition, analysis and audit leading to resource and mine optimisation.

MINING ENGINEERING CONSULTING AND ADVISORY
Design, study analysis and audit to provide operational strategies and process improvement aimed at optimizing mining operations.

OPERATIONAL OPTIMISATION
Reviews designed to improve sustainable financial outcomes for mining projects.

RISK ASSESSMENT
Probabilistic life of asset risk modelling of mining projects to minimise risk in investment decisions, match investor risk appetite and mitigate ongoing operational risks.

AUDIT AND REVIEW
Including compliance audits, benchmarking reviews, operating and capital cost reviews and quality enhancement reviews.

TRAINING AND MENTORING
Our 2015 Professional Development Training Program is in partnership with The AusIMM. Courses available as both public courses and tailored on-site training.

VALUATION
Mining project valuation services, from exploration through to mining operations.

TRANSACTIONS
Capital strategy and support for capital raising and debt financing, mergers and acquisitions – asset identification, review and due diligence.

BOARD SUPPORT
Business planning, financial and technical guidance.

FINANCIAL MODELLING
Tailored model construction, maintenance and audit services for feasibility studies, project analysis, debt and financing transactions.

OREPACK™ SOFTWARE
The Optiro Resource Estimation package (OREpack) is a suite of software tools that help geologists create better resource estimates. The tools work seamlessly with Surpac to help: optimise kriging parameters; manage multitude of estimation parameters for multiple elements in multiple domains for resource and grade control models; create accurate global and local estimates of recoverable resources at SMU scale from sparse drilling data; optimise drill pattern spacing; and validate block models.

CONTACTS
Director of Geology: Ian Glacken - iglacken@optiro.com
Director of Mining Engineering: Andrew Law - alaw@optiro.com
Manager of Training: Diana Titren - dtitren@optiro.com
Manager of OREpack: Rowdy Bristol - rbristol@optiro.com

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