CAE Strat3D represents a step change in the mathematical modeling of coal deposits.

Whether in consulting, exploration, resource development, planning or production, CAE Strat3D is the new modeling standard for geology professionals. CAE Strat3D creates strata block models - true 3D models of coal deposits that provide better integration of structure and quality, resource, burden and other properties.

CAE Strat3D is a powerful workflow oriented user interface combined with a fast and comprehensive model generation platform. This system supports drill holes and all other 3D surface data including faults and their structural controls.

Benefits

One of a Kind Environment
With a standard work flow, rigorous modeling controls, sophisticated modeling algorithms and comprehensive reporting functions, CAE Strat3D provides an extensive, productive modeling environment for rapidly building and validating models.

The Best Possible Model
Geological data from drill holes, survey and mapping plus seismic data for all seam locations and faults, along with discontinuities may be used to create the best model possible using all the input data – intercepts, trends, dips and throws.

A sophisticated set of modeling rules and controls may be defined including a full coal seam table of conformable sequences, parent and elemental splits per sequence and transgressive surfaces and units for intrusion modeling.

Seam wireframes and a 3D strata block model of triangular prisms provide familiar, easy to use spatial objects as well as a holistic, autonomous framework to define the model geometry and attributes.

Modeling Auditability
Data, controls, models and results may be readily quarantined to maintain a complete history of the modeling process.

Data Validation and Relationships
An interactive seam correlation tool allows all drill hole data to be displayed graphically along with wireline and quality data and the best decision made on seam picks and relationships between holes.

The Easy to Use, Cost Effective Solution
CAE Strat3D demystifies stratigraphic modeling, making it intuitive, easy to understand and use. This cost effective solution is the all-in-one answer to visualization, classification, evaluation and mine planning.
Inside CAE Strat3D

Geological Structural Model

With CAE Strat3D construct models in clear stages:

1. Decompose and transform the input drill hole and other 3D data into a paleo-reconstructed space
2. Build a complete surface and thickness model at each drill hole location including all surfaces and seams
3. Construct 3D wireframes using all modeling rules and constraints and re-transform into the real world space
4. Intersect the wireframe against a 3D block model prototype to create the strata block model

Quality Models

Construct models using transformed drill hole and other 3D quality data (ply or composite) and strata block model cells to populate each cell representing a coal seam with interpolated quality and other property values

Feature Summary

- Comprehensive data entry for drill hole survey and lithology data, ply and/or composite quality data plus geophysics and survey and other point data types
- Pictorial stratigraphic schematic for geological sequence and seam and split definition including complex splitting, continuity and conformity interrelationships
- Modeling rules for drill hole data constraints, surface and thickness interpolators, trending and smoothing rules, flags to identify and define data reliability
- Powerful drill hole correlation to facilitate data preparation for modeling – depth correction, working section identification, fault orientation and location, management of modeling flags and strata correlation
- Interactive fault definition and manipulation using the surrounding drill hole and other 3D point and trace data
- Seam based expression language to manipulate and interrogate drill hole and model information
- Structural model creation using seam definition and modeling rules to create wireframes and a strata block model
- Quality model creation using compositing rules and interpolators to update the strata block model with quality attributes and other properties
- Resource classification using areas of influence to define a range of confidence intervals and a set of interactive and processing options to create regions for evaluation
- Evaluation of resource and reserve volumes and tonnages using regions and a selection of qualification and categorisation options to subset the results in a range of thickness, quality or other classes
- Flexible output options for plotting, reporting and model and data export

CAE Mining can provide comprehensive implementation and consulting services from our global network of offices, ensuring the delivery of a fully configured solution that meets your particular business requirements.