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

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

Logical workflow oriented interface

With its simple, clean interface CAE Strat3D guides the user through the sequence of activities to produce and validate detailed three dimensional stratigraphic models. CAE Strat3D provides a productive environment for rapid building of geological models with minimal effort required.

Tools that a geologist feels comfortable with

CAE Strat3D requires a number of geological inputs and controls in order for it to produce a detailed geological model. Many of the tools used for data correlation and strata definition are intuitive to a geologist and closely resemble what they have been doing for years on paper. These tools allow for a high degree of geological input and control on the creation of the models. It is possible to define conformable sequences, parent and child splits per sequence, transgressive surfaces and units for intrusion modeling.

High quality three dimensional models

The models produced by CAE Strat3D can incorporate a higher degree of geological complexity. Three dimensional solid models of very narrow strata (up to a few centimeters in thickness) can be created without the top and bottom surfaces intersecting each other.

Geological data from drill holes, survey, mapping, seismic data and structural data like faults and discontinuities may be used to create the best model possible using all the input data - intercepts, trends, dips and displacements.

The three dimensional block models produced by CAE Strat3D consist of unconventional triangular prisms allowing for it to very consistently fill narrow strata with no gaps between the blocks. This makes it possible to spatially interpolate geological and other attributes in stratabound deposits with a high level of detail and accuracy.
Inside CAE Strat3D

Geological Structural Model

CAE Strat3D models are created 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 intervals.
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 with interpolated grades and other attributes.

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 strata 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.
- Strata based expression language to manipulate and interrogate drill hole and model information.
- Structural model creation using strata definition and modeling rules to create wireframes and a strata block model.
- Grade model creation using compositing rules and interpolators to update the strata block model with grades and other attributes.
- 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 categorization 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.