

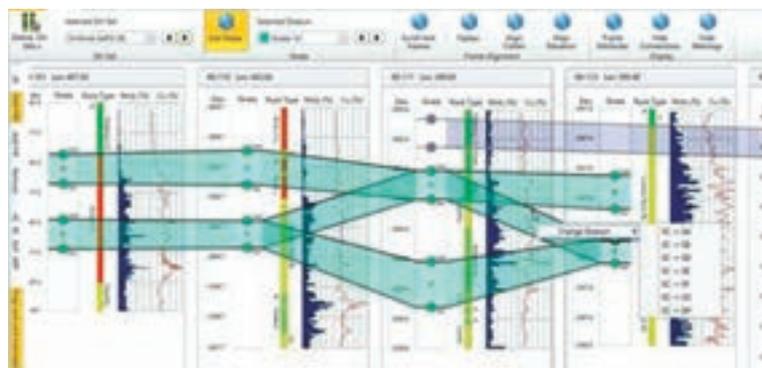
A clear picture

Hexagon Mining aims to help geologists form a clearer picture of what lies below the surface

Stratigraphic mapping in the Drillhole Correlation Tool, using rapid streamlined design workflow

Geologists working in stratigraphic deposits must consider a multitude of factors to help improve their understanding of them. Downhole geophysical data, rock hardness, lithology, structures and assay information are among the features that must be correlated to interpret the stratigraphy and lithology layers. All these data sources need to be evaluated and aggregated quickly to make decisions and communicate results to operations or other downstream stakeholders.

To address this challenge, digital mining solutions provider Hexagon Mining has enhanced its comprehensive MineSight mine planning software suite with the Drillhole Correlation Tool. The tool is



integrated with the suite's drill-hole database manager, MineSight Torque, and its flagship visualisation solution, MineSight 3D.

Hexagon Mining's product manager Seth Gering notes: "Users of the Drillhole Correlation Tool can view and analyse drill-hole profiles using Torque's

SQL database in 2-D, and the integration with MineSight 3D also allows them to visualise that information in 3-D."

He adds: "The customers who will benefit most from this tool are those that deal with stratigraphic deposits – coal, iron ore and evaporites – and who typically deal with drill-hole correlation types of plots.

"Not only can they look at stratigraphic layers; they can bring in information from grade values, hardness data and geophysical data; lots of information that can be used to improve their understanding of the deposit."

Using assay, geology and geophysical information displayed in the tool, the geologist creates one or more intercept points to eventually form strata intersections along drill holes.

The drill holes are projected vertically and can be moved so that corresponding layers are aligned horizontally. The resulting intersections are uploaded to MineSight Torque as intervals for further analysis and use with other applications.

BETTER INTEGRATION

The tool integrates with MineSight 3D for managing sets of drill holes to be used for correlation. MineSight 3D is the foundation of Hexagon Mining's mine planning suite and can visualise output from all MineSight products. Its core

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functionality includes creating and manipulating 2-D and 3-D data, editing, querying and plotting/display of all types of geology and mining data.

As a geologist creates and edits intersection points, the Drillhole Correlation Tool uses an intuitive set of rules to automatically connect them to display strata sections. For complex strata formations, such as bifurcations and pinches, the geologist creates explicit connections between intercept points or marks intersections as pinches.

The Drillhole Correlation Tool includes a basic set of validation rules that warn the user when intersections overlap, and when intercepts are inconsistently flagged as pinches in different drill-hole sets. The strata statistics report can be used to obtain descriptive statistics on strata.

The tool stores its own data in a local file. However, because it integrates with MineSight

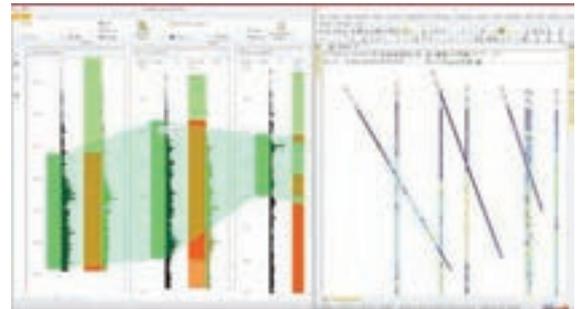
Torque, the user roles and security model of Torque are also applied when accessing data or uploading strata.

MODELLING SEAM DEPOSITS

The Drillhole Correlation Tool is a response to feedback from stratigraphic clients seeking this functionality to better model their deposits. Gering says the tool fills a gap in the planning portfolio for modelling seam deposits, such as iron and coal, and will certainly help any customer working with coal and stratigraphic deposits.

The tool is included with MineSight, and any user with a MineSight licence can use it to visualise the correlation plots. However, users must have a MineSight Torque licence to create new sections.

Gering believes the tool's simple user interface built on micro-interactions and validations will allow for a repeatable workflow, better interpretation



and fewer mistakes with overlapping seams.

Further integration is key to the tool's future, he adds.

"Geologists can use the tool for basic analysis," he comments. "But given the other solutions at Hexagon's disposal, there's great potential for more integration.

Our Jigsaw high-precision guidance for drills will allow us to pull in additional information on penetration rates, hardness layers and softness layers. The next steps will be to look at where we can pull in this information and improve the workflow for users."▼

Integration between the Drillhole Correlation Tool and MineSight 3D for 2-D or 3-D visualisation

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