

# AXORA

METALS & MINING AX01129

The technology  
marketplace for  
heavy industry

**AI-driven drilling optimisation solution**

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VERIFIED for short term payback

# CONTENTS

3 How it works

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4 Top business benefits

---

5 Customer success stories

---

6 FAQ

---

7 About Axora

---

7 About the solution provider

---

7 Your next steps

---

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## AI-DRIVEN DRILLING OPTIMISATION SOLUTION

### How it works

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Mineral resource evaluation typically requires drilling multiple boreholes into a targeted mineral deposit, yielding thousands of metres of samples necessary to estimate the grade, mineralogy, size, and structure of the deposit.

Mineral resource projects collect reams of downhole data, including assays of 30-50 geochemical elements and geomechanical rock properties (such as RQD, MagSus, and SG), in addition to detailed lithological, mineralogical, and alteration information. All of this data is critical in advancing and reducing the risks associated with a project's development.

Processing all this geoscience data often means calling on multiple experts who slowly and expensively analyse and model the data.

This solution was developed to dramatically improve the speed and utility of geoscience block modelling. With the use of AI, this solution analyses the drill data to automatically detect and map anisotropy. It then uses these results to generate block models of every data attribute, employing standard interpolation techniques such as inverse distance and kriging. The solution then enhances a geologist's own insights by applying feature-recognition machine learning routines to identify and categorise anomalous, multi-attribute features and patterns that exist in the data.

Being cloud-based, it can be accessed from anywhere, anytime, and can harness enormous computational power to process large datasets in a matter of minutes.

#### Key facts

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under

# 1WK

typical set up

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under

# 1YR

to achieve ROI

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# 20+

successful drilling  
programmes

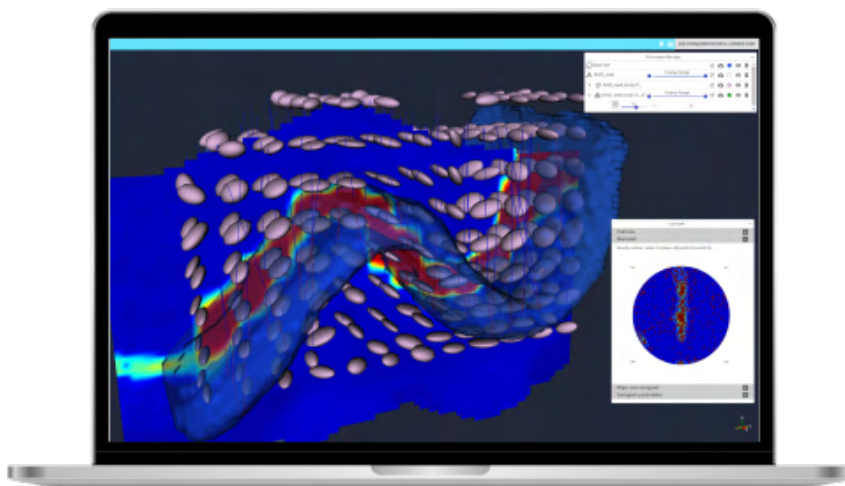
## TOP BUSINESS BENEFITS

**There are five main business benefits of this AI-automated 3D block modelling software:**

- › Quickly turns raw numeric drilling data into useable block models and wireframes
- › Provides immediate access to 3D realisations of every aspect of the dataset, minimising underutilised data
- › Provides better deposit knowledge to support faster and more accurate drill targeting
- › Automated anisotropy (directional data continuity) analysis supports detailed structural studies and deposit understanding
- › Significantly reduces exploration targeting costs by helping you quickly test hypotheses and drill fewer holes

By harnessing the power of machine learning and artificial intelligence, this cloud-based software solution is leading the industry towards a new era of automated geoscience block modelling. The AI algorithms emulate the workflow of a geological modelling specialist, and can turn raw numeric drilling data into block models and anomaly zone wireframes within minutes.

The speed and reproducibility of this style of analysis means you can rapidly and cost-effectively apply advanced geostatistical modelling techniques to every attribute in your dataset. This enables complete and comprehensive control to systematically identify geochemical exploration vectors, provide geometallurgical insights for mine planning and mill optimisation, and potentially uncover environmental problems earlier in the mine life cycle.



### Top benefits

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## CUSTOMER SUCCESS STORIES

### Mineral exploration company

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**Customer challenge**

This minerals exploration company was frustrated at the time it was taking its geologists to interpret deposit zonation.

**Solution**

This solution indicated mineral potential beyond known resources in a fraction of the time typically given over to such a discovery.

### Nickel, cobalt, and sulphide mining company

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**Customer challenge**

This nickel, cobalt, and sulphide mining company was struggling to quickly and cost-effectively identify deposit types.

**Solution**

This solution enabled the team to rapidly identify deposits of interest, allowing the geologists to work much more effectively and focus their skills on insights and decision-making more than data crunching.

### Gold exploration company

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**Customer challenge**

This gold exploration company was keen to be able to quickly identify the geological relationships between various structures.

**Solution**

This solution was able to provide an unbiased second opinion to augment the company's own exploration efforts for about the cost of a single borehole.

## FAQ

### Do I need to buy any equipment to use this solution?

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No, this is a cloud-based software solution that requires no additional hardware or software installation.

### Who would typically use the solution?

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This solution is designed to be used by modelling experts and non-experts alike. It is designed to support a geologist's understanding of a mineral deposit, helping them to make decisions faster, with less time spent crunching data.

### How long does it take to deploy?

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It can be set up and in-use within a few days.

### What is the ROI?

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The return on investment is almost immediate after use. This solution is proven to save upwards of \$75,000 per drill hole that it saves boring, a saving typically many times the cost of the solution.

### Does it require a large team to deploy?

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No, this solution requires little technical training to use and is designed to cover the work of large geological teams, making it particularly attractive to smaller companies who cannot support a large team.

### Does this solution only work with stationary data?

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No, this solution can calculate global anisotropies for stationary data and automatically create locally varying anisotropy fields to model non-stationary datasets.

# About Axora

Axora is the global technology **marketplace** for heavy industry. We source the best innovative solutions, to solve the biggest industrial problems.

Our service helps industrial companies to discover, evaluate, procure and deploy technology from all over the world.

Entrusted globally by 100s of industrial leaders and innovative solution providers, we help companies take action to hit their safety and sustainability goals.

## Your next steps

→ [Email us](#)

# About the solution provider

Created by a team of experts in geology, climate risk, and machine learning technology, this company's AI-powered software provides automatic 3D block modelling for a near-instant 360° analysis of the entire drill dataset.

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