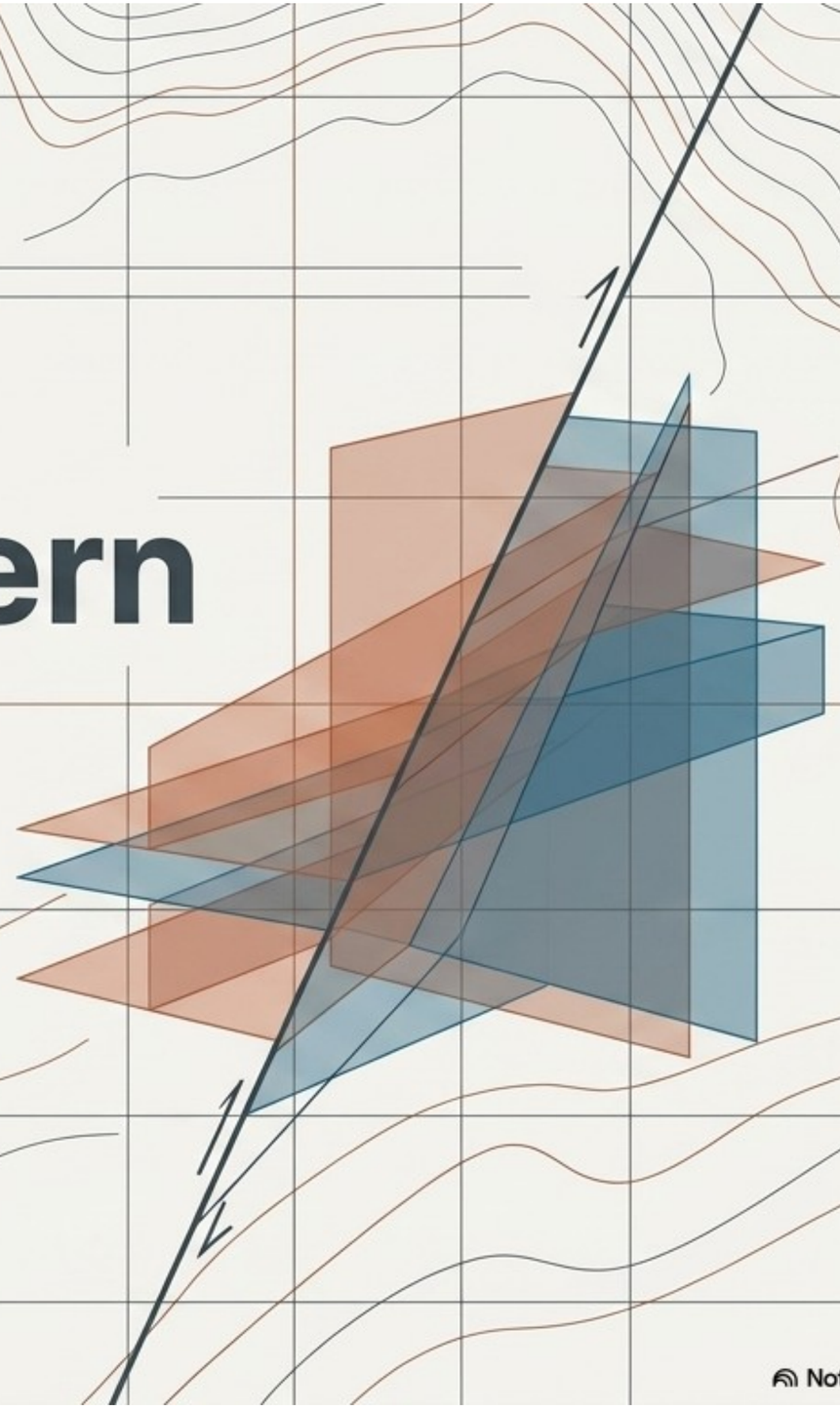
BOTSWANA MINERALS
Ar-Driven Minerat Eiscovery

PLANETARY AI

Xplore
De-riating mineral ecplaestion

Precision Mineral Targeting in Northern Botswana

Identifying 36 de-risked polymetallic anomalies through integrated AI analysis and geophysical convergence.



Extensive & Underexplored District

A large, prospective land position in an underexplored area with high mineralisation potential.

36 Identified Anomalies

High-priority copper and polymetallic targets prioritized across Licences 548 and 549.

6 Exploration Corridors

Structurally focused corridors verified by overlapping multi-disciplinary data inputs.

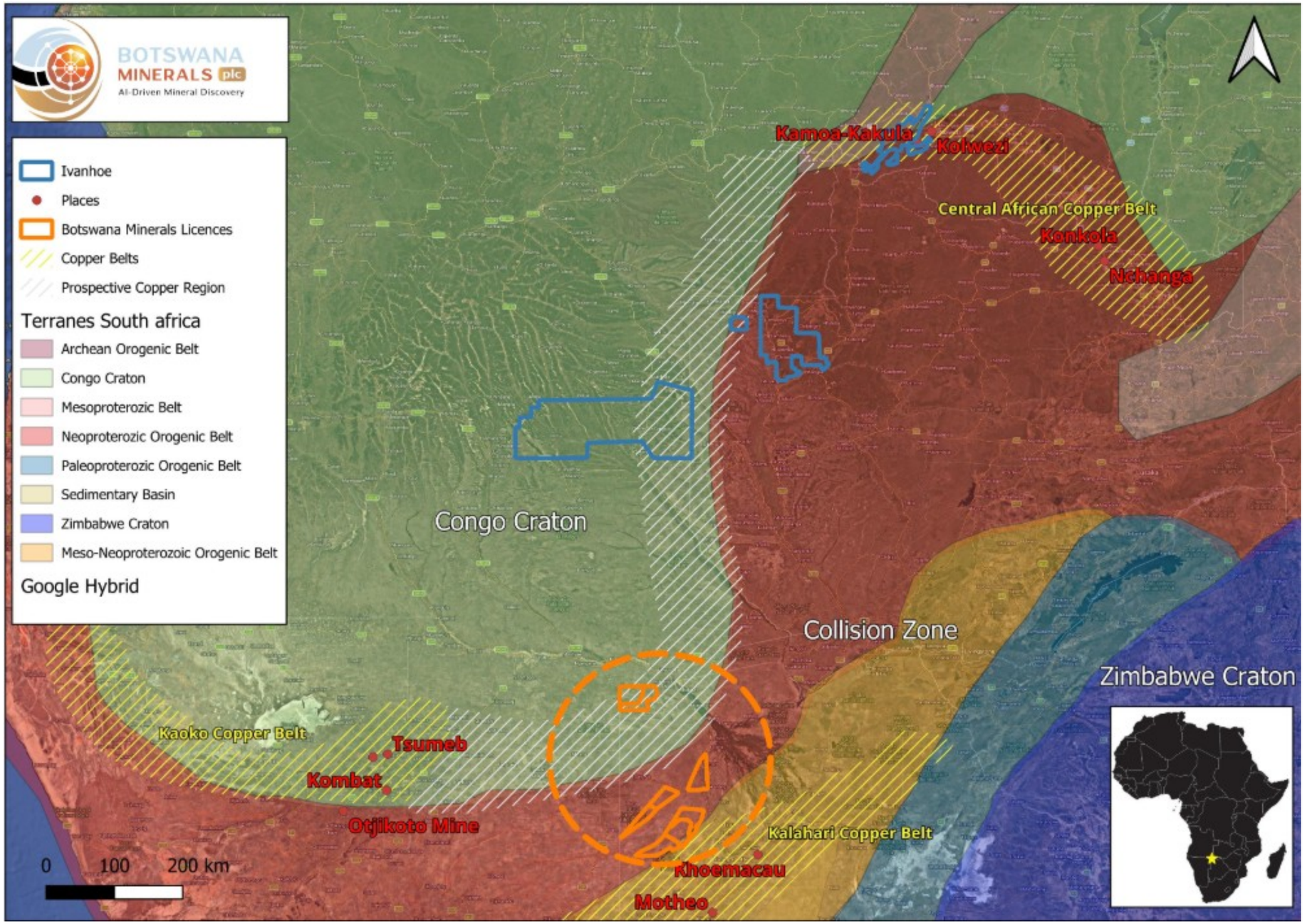
Carbonate Host Rocks

Widespread paleoproterozoic metasedimentary sequences, a critical hallmark shared by premier copper mines globally.

Exploration Implications

- Large-scale geophysical anomalies highlight a substantial, underexplored mineralised system.
- Multiple structurally controlled corridors provide priority pathways for fluid flow and mineralisation.
- Prospective carbonate host rocks reinforce the potential for world-class copper discoveries.

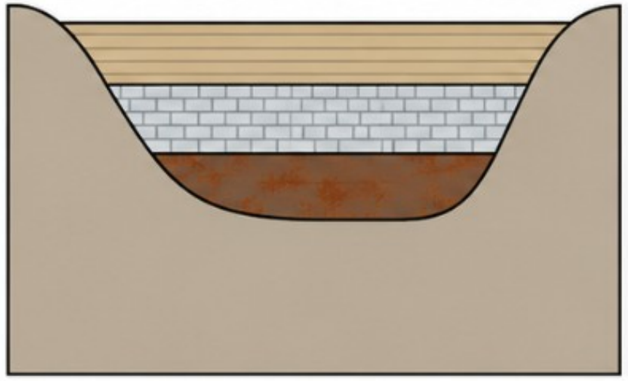
NEOPROTEROZIC COPPER CORRIDORS: SOUTHERN & CENTRAL AFRICA



Kaoko Copper Belt Extension:
Linking the Central African Copperbelt & the Kaoko Copperbelt would pass through BMIN licenses 548 & 549

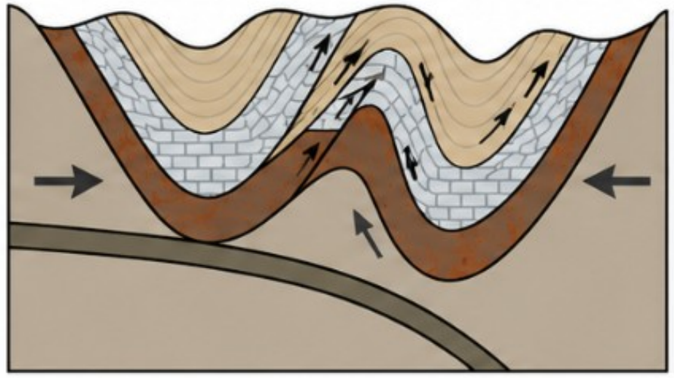
Strategic Positioning:
This trend is recognized as an under explored potential extension linking these major African Copperbelts. BMIN holds the strategic Botswana linkage.

1. Deposition



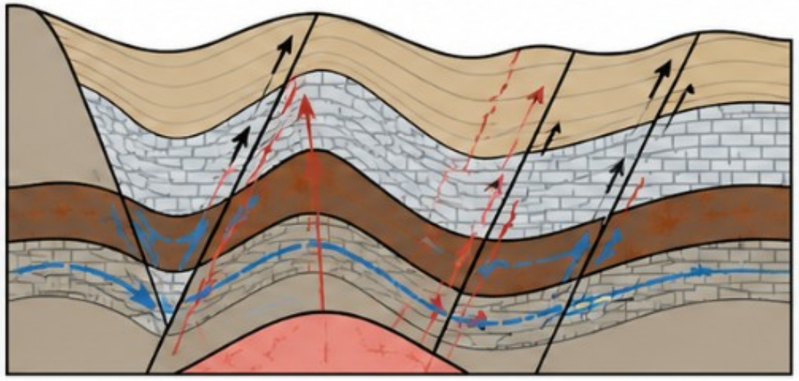
- Marine basin development
- Deposition of silica-rich clastics, carbonates and iron-rich units
- Formation of regional chemical traps and prospective host sequences

2. Subduction & Compression



- Subduction and crustal shortening
- Folding, faulting and thrusting
- Fluid migration along faults
- Development of structural traps and permeable pathways

3. Magmatism, Fluids & Mineralisation



- Igneous intrusion provides heat and metals
- Faults focus hydrothermal fluids
- Formation of mineralisation
- Circulating basinal brines
- Multiple mineral system potential within one orogenic cycle

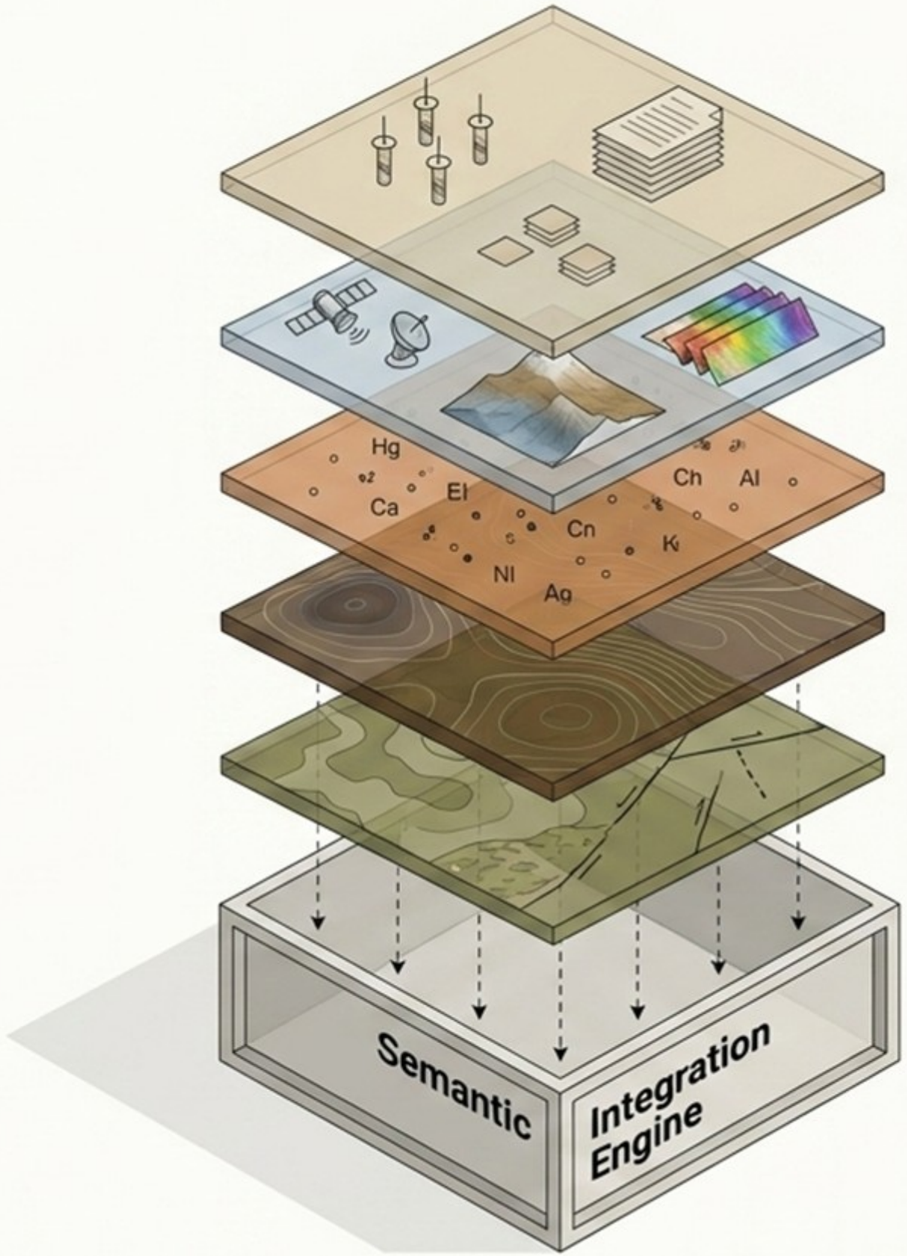
Siliciclastics | Carbonates | Ironstones | Igneous intrusion | Hydrothermal fluids (hot) | Basinal brines (cool)

The Targeting Mechanism

A complex history of compression, **faulting, and heat** creates the necessary architectural plumbing for metal deposits to form.

Multi-Dimensional Geological Integration

Geological, structural, geochemical, geophysical and remote sensing datasets are integrated within a unified interpretive framework.
AI-assisted semantic analysis and machine-learning techniques help identify subtle spatial relationships and coherent mineral system patterns that may not be apparent through conventional single-dataset interpretation.



Legacy Data
~49 Boreholes, 29,000+ processed documents.

Remote Sensing
SAR, DEM, Hyper-spectral.

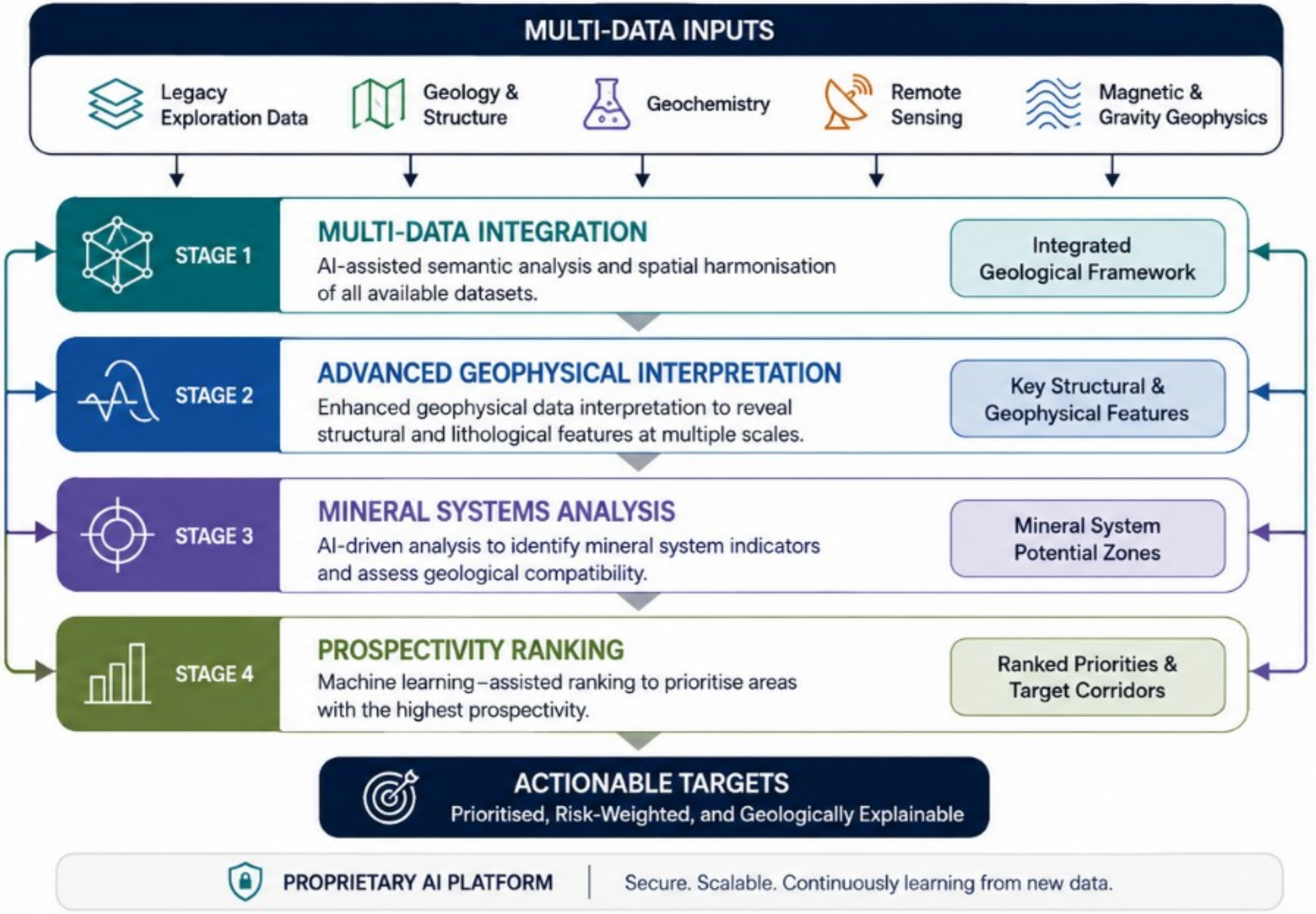
Geochemistry
High-dimensional multi-element geochemical dataset.

Geophysics
Bouguer Gravity, TMI Magnetic.

Geology & Structure
1:100,000 mapping, inferred faults.

The Targeting Funnel: Data to Actionable Targets

AI-assisted integration and interpretation across multiple datasets



VALUE DELIVERED

Rapid regional screening

Cover more ground, faster.

Reduced search space

Focus effort where it matters.

Geologically explainable targets

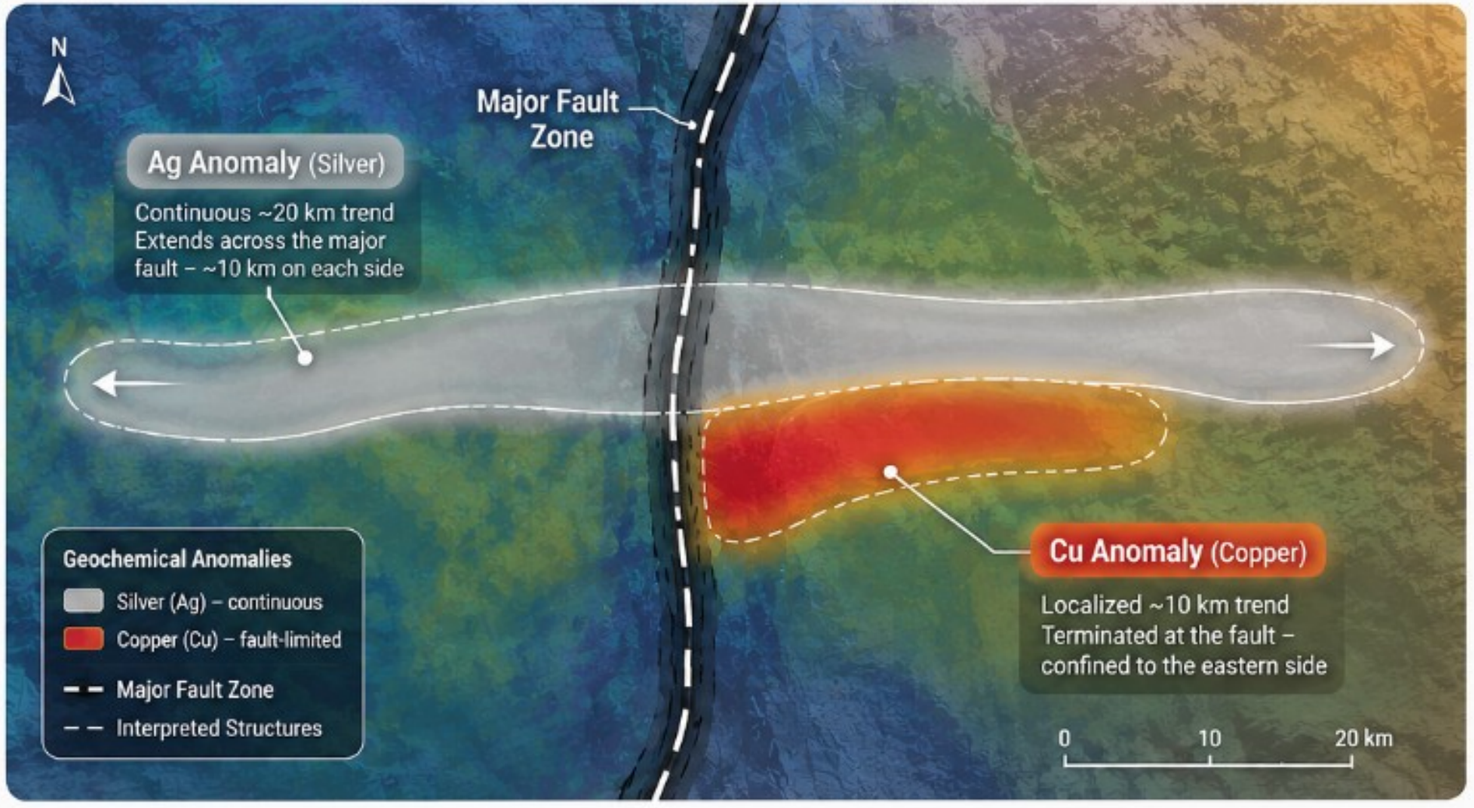
AI insights grounded in geological context.

Adaptable to multiple deposit styles

Built for flexibility across mineral systems.

Structurally Controlled Geochemical Asymmetry

Silver anomalism extends across the fault; copper anomalism is fault-limited.



KEY GEOLOGICAL INSIGHTS

Silver Corridor Crosses Fault

Silver anomalism defines a long-lived, regionally extensive fluid pathway that crosses and continues beyond the major fault.

Copper Terminates at Fault

Copper anomalism is focused on the eastern side and terminates at the fault, indicating structural control on fluid focusing and trapping.

Fault as Conduit and Boundary

The fault acts as both a major fluid conduit and a geochemical boundary that differentiates metal distributions.

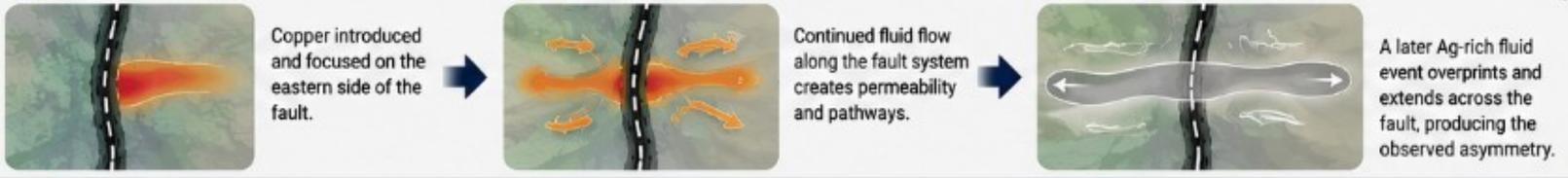
Temporal Evolution (Conceptual)

Copper mineralisation likely predates or is contemporaneous with the main Ag event, consistent with overprinting of Ag over Cu.

Mineral System Implication

The asymmetry reflects evolving fluid pathways, structural controls, and changes in geochemical conditions through time.

TEMPORAL EVOLUTION (CONCEPTUAL)



The major fault **controls the distribution** of metals and the **evolution** of mineralising fluids through time.

Geological Interpretations

Two viable models to explain the observed Ag–Cu asymmetry across the major fault

Integrated **geochemical, geophysical and** structural evidence supports **multiple, testable mineralization models.**

MODEL 1 – SINGLE EVOLVING HYDROTHERMAL SYSTEM

One fluid system – metals precipitate at different points along the structure

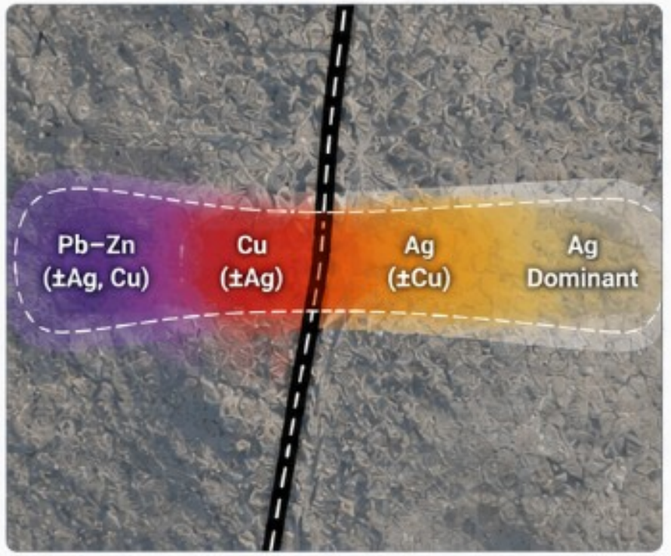
Concept:

A single, long-lived hydrothermal system evolves through time and space. Metals precipitate sequentially at different locations along the structural corridor.

Mechanism:

Changes in fluid composition, permeability and interaction with host rocks lead to spatial variation in metal precipitation along the same fluid system.

PLAN VIEW – SAME FLUID SYSTEM



Key Characteristics

- All metals are derived from the same hydrothermal fluid.
- Metal distribution reflects changing conditions along the structural corridor.
- Silver forms a broad halo extending along strike.
- Copper is focused near the central part of the corridor.
- Lead–zinc occurs toward one end of the system where conditions favored its precipitation.

MODEL 2 – TWO DISTINCT MINERALIZING SYSTEMS (OVERPRINTING)

Two separate systems – different sources, temperatures and timing

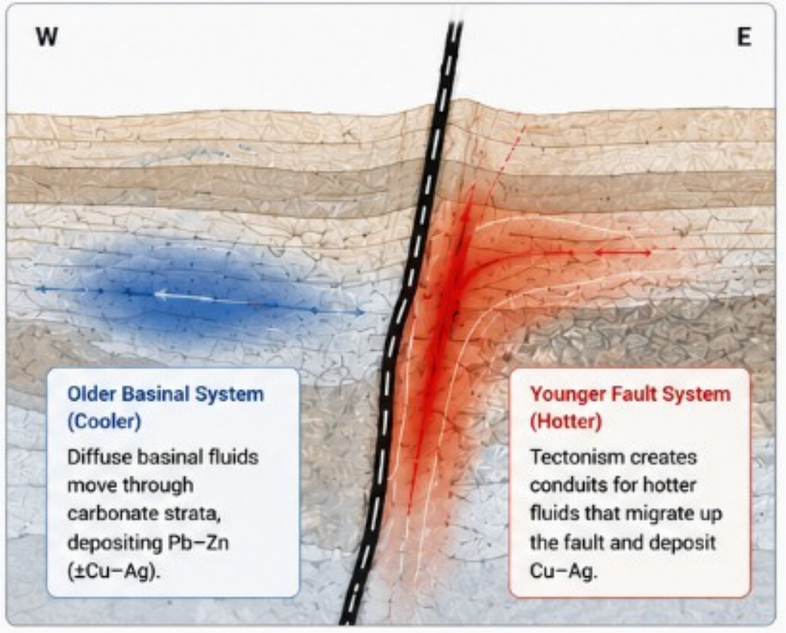
Concept:

An older, cooler basinal system deposits Pb–Zn (with minor Cu–Ag). It is overprinted by a younger, hotter fault-controlled hydrothermal system that deposits Cu–Ag.

Mechanism:

Basinal brines circulate in carbonate strata and precipitate Pb–Zn. Later tectonism creates permeable structures that channel hotter fluids, generating Cu–Ag mineralization.

CROSS-SECTION – TWO SEPARATE SYSTEMS (LOOKING NE)



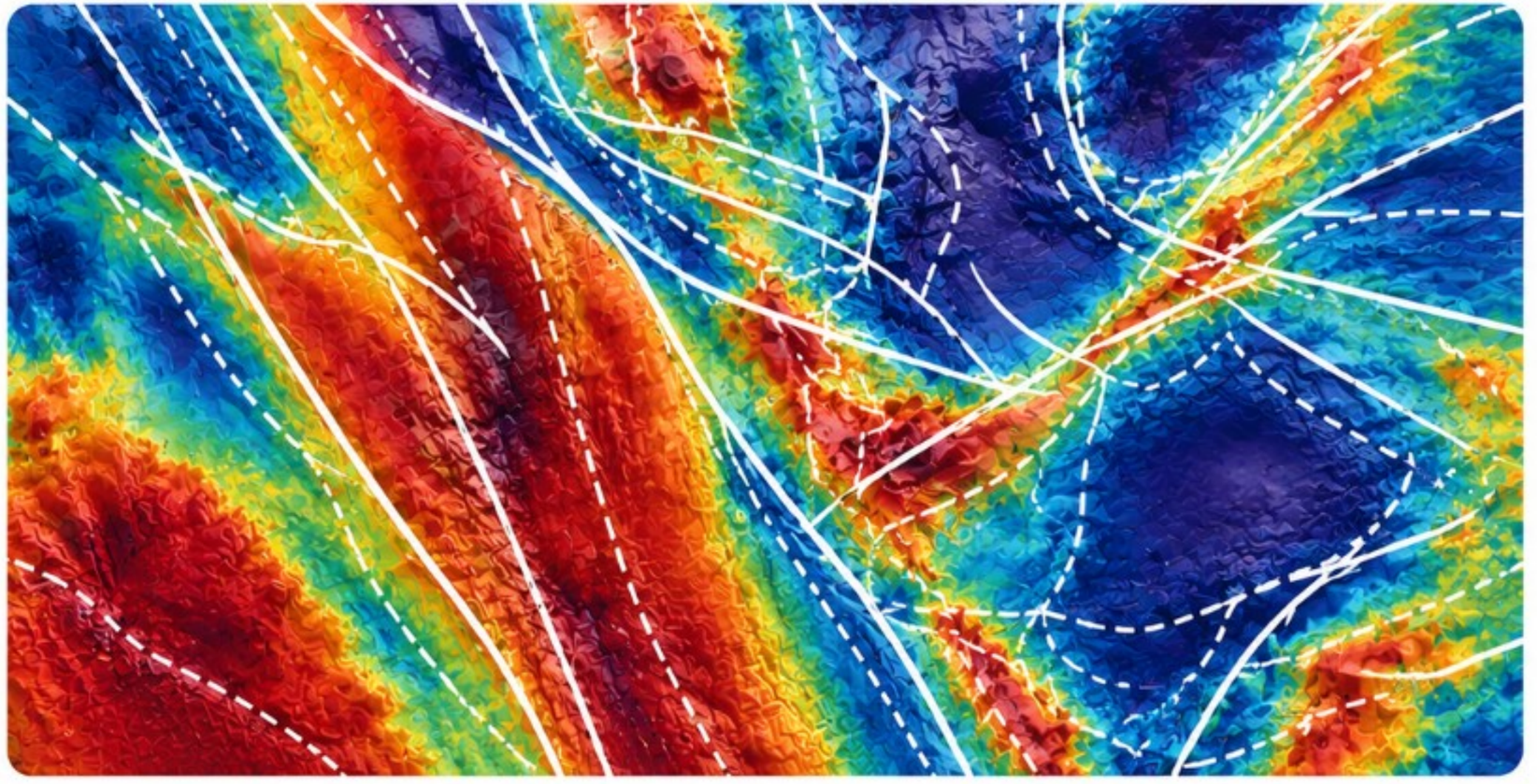
Key Characteristics

- Two distinct mineralizing events.
- Different fluid sources, temperatures and pathways.
- Spatial separation of metal assemblages reflects timing and process.

Both models are geologically plausible, but geochemical analysis more strongly supports the **two-system model.**

Deep Structural Architecture from Integrated Geophysics

Integrated geophysical data reveals deep structures that focus and channel hydrothermal fluids.



Deep Structural Domains (Low Response Zones)

Represent deep basin development and structural depressions that provide accommodation and fluid storage.

Major Structural Lineaments (Crustal-Scale Structures)

Regional-scale faults and shear zones that act as conduits, focusing and channeling hydrothermal fluids.

Integrated interpretation of gravity, magnetic and electromagnetic data provides a robust framework for identifying key mineral systems.

Exploration Implications

High-priority targets occur where deep structural domains coincide with major lineaments, providing optimal pathways for fluid flow and mineralization.

- Confirms deep structural architecture and basin development
- Identifies fluid conduits and structural intersections
- Supports vectoring toward high-priority mineralization targets

AI-Driven Intelligence Pipeline: From Legacy Text to Spatial Precision

Automating the extraction of critical geological insights from historical documents.

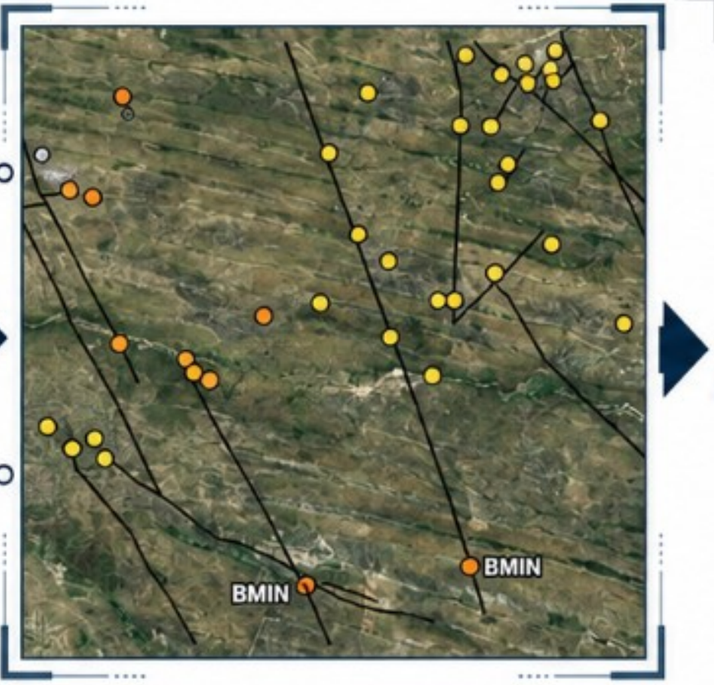
Unstructured Legacy Input

29,000+ historical documents and **~49 legacy boreholes.**

Semantic Pattern Recognition

AI engine scans **1,800 precise records** referencing the **Area of Interest**, searching for **spatial clues.**

Anomaly Validation



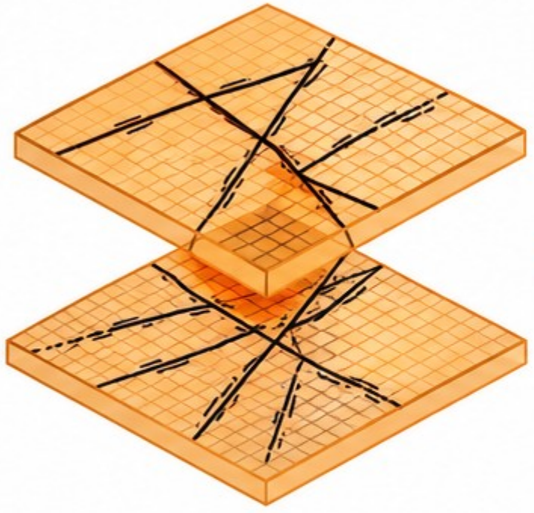
Boreholes identified in the geological record for follow-up evaluation, potential re-logging and integration into the regional targeting framework.

This process reclaims lost data, creating a new, **verified spatial intelligence layer** for **high-priority targets.**

The Evidence Convergence Equation

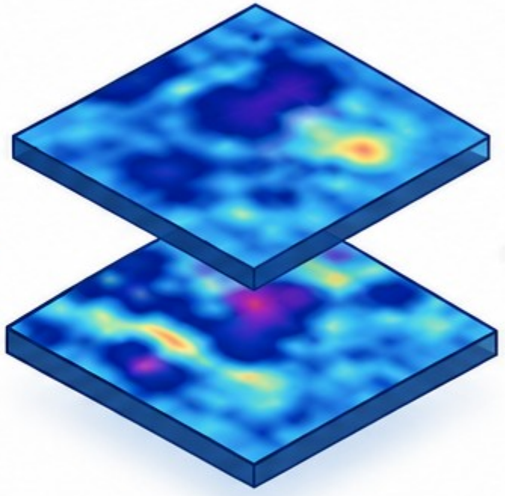
High-probability targets are defined by the **strong alignment** of three independent datasets.

Structural Trap



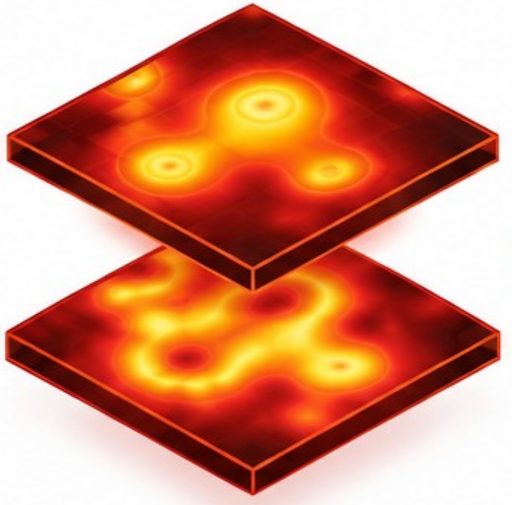
Fault intersections, flexure zones and structural preparation create fluid traps and pathways.

Magnetic Signature



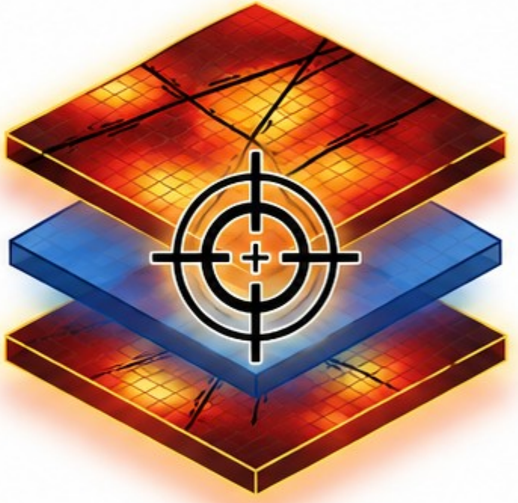
Magnetic patterns delineate key structures and highlight prospective corridors.

Geochemical Halo



Multi-element geochemical anomalies outline potential mineralising systems.

High-Probability Target

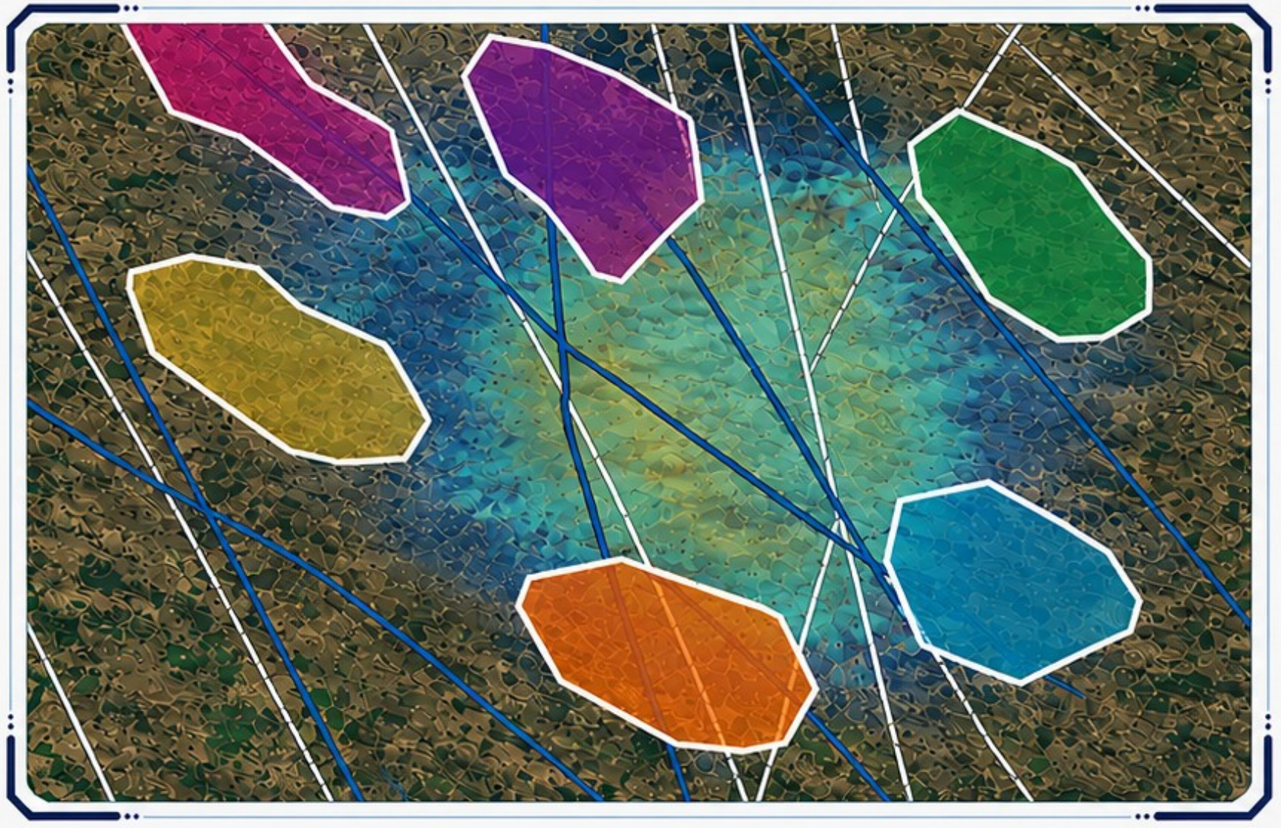


Targets are prioritised where structural, magnetic and geochemical evidence coincide and reinforce.

Exploration Implication

The greatest potential lies in areas where structural traps, magnetic signatures and geochemical halos overlap and reinforce, defining our highest-priority targets.

TARGET DOSSIER: AOI 001



INTEGRATED PROSPECTIVITY SCORE:

HIGH

REGIONAL CONTEXT

Carbonate-dominant host sequence within a structurally focused corridor.

EVIDENCE CHECKLIST

- Cu-Ag-Zn-Cd geochemical support
- Fault intersections & structural trap geometries
- Optimal geophysics response
- Favourable hyperspectral anomalies

COMPATIBLE DEPOSIT STYLES

- Distal IOCG affinity
- Kipushi-style (Cu-Zn-Pb-Ag)
- Carbonate Replacement (CRD)
- Breccia/pipe-style systems
- MVT / Irish Type

Forward Exploration Strategy

Advancing from regional-scale target generation toward field validation and drill prioritisation.

COMPLETED — NEXT PHASE — FUTURE PHASE

1 REGIONAL TARGET GENERATION

- Integrated multi-disciplinary prospectivity analysis
- Structural, geophysical and geochemical target definition
- Mineral-system-scale corridor identification
- Ranked target portfolio generation

Outcome: *Six high-priority target corridors defined across the licence area.*

2 FIELD VALIDATION & REFINEMENT

- Geological mapping and structural validation
- Alteration and lithological verification
- Geochemical follow-up sampling
- Refinement of highest-priority targets

Outcome: *Validated and refined targets with improved confidence and reduced risk.*

3 ADVANCED GEOPHYSICS & DRILL PLANNING

- Target-scale geophysical refinement
- Structural architecture modelling
- Drill targeting and ranking
- Integrated GIS-ready targeting products

Outcome: *Drill prioritisation and execution-ready targeting framework.*

The integrated assessment has transformed large-scale regional datasets into a **prioritised portfolio** of geologically coherent mineral-system-scale exploration opportunities suitable for **staged technical advancement**.