

Imagine a computerized modeling system capable of predicting the location of a mineral deposit.

ALBERT MINING

CARDS^{2D}

CARDS is a state-of-the-art computer system used by researchers at Albert Mining to identify areas with a high statistical probability of containing mineral deposits. The backbone of CARDS is the MCubiX-KE (Knowledge Extraction) data mining engine.

MCubiX-KE uses pattern recognition algorithms to learn the signatures of positive and negative data points and create a model that can make predictions on the positive or negative nature of new data points. CARDS uses these powerful algorithms to analyze digitally compiled historical exploration data and identify zones with a high potential for the discovery of mineral deposits.

Data is entered into CARDS in the form of a geo-referenced database. Each point in the database is linked to its own set of characteristics extracted from geophysical surveys, drill & rock samples assays, geological maps, etc.

These characteristics include:

Geophysics (Mag and EM, etc.), Chemical Assay Results (drill holes/rock samples), Geochemical Surveys (lake sediment/soil/till), Geology (faults, lineaments, lithology, alteration minerals, etc.) and Topography (DTM, DEM and SRTM).

The data is then divided into two databases:

1. The first includes all points with known metal assay results (drill hole/rock samples data) and is used to develop the model of the geological target you are seeking. For example, the model could be used to identify targets containing greater than 5 g/t Au.
2. The second database includes all points with no assay results.

The complex algorithms of MCubiX-KE are then used to identify those points that have a high similarity to the signatures of positive mineral deposits.

In addition, in the analysis of each point in the database, the characteristics of all points within a specified distance of the point, or neighbourhood, are weighed into the evaluation of that point.

In this manner, points lacking data can still be effectively evaluated by CARDS if the combination of their limited characteristics and their proximity to points with other significant characteristics is similar to that of points in the system with known positive results.

Furthermore, unlike the rule-based computer models of the past, CARDS is not biased by the rules of any particular geologic model. In fact, because of CARDS ability to learn and make predictions based on the signatures of multiple positive data points of varying characteristics, CARDS can make predictions on any geological deposit type represented in the data set.

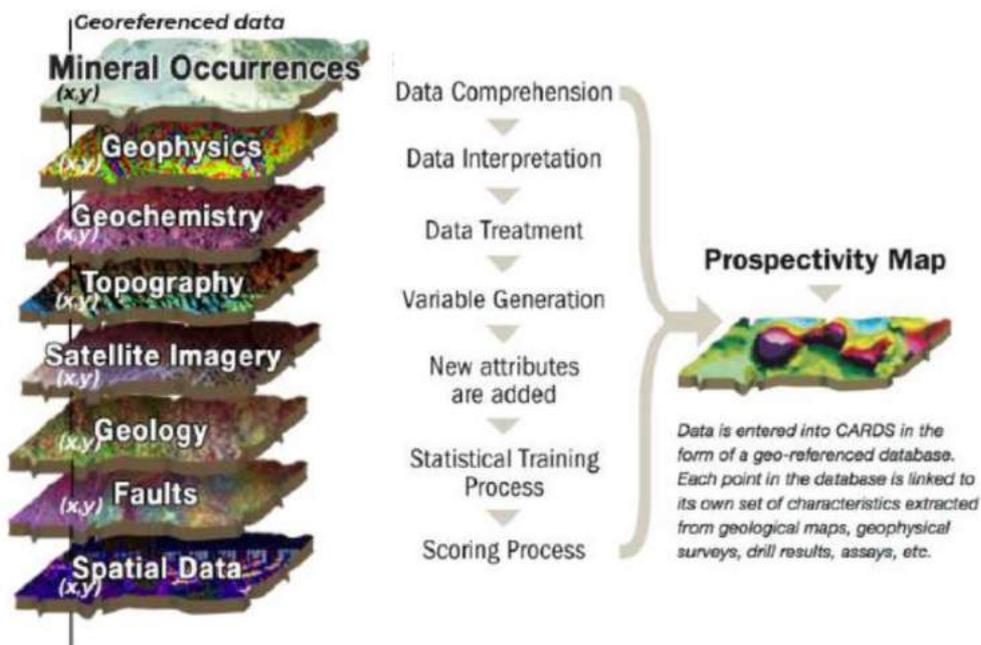
Note: Targets generated by CARDS should be evaluated in conjunction with all readily available geological data in the evaluation of the economic potential of the property as well as in the outlining of exploration and drill targets.

THE CARDS PROCESS FOLLOW THESE FOUR STEPS :

1. DATA GATHERING & PROCESSING

CARDS IS NOT A GIS SOFTWARE

- Combines different map formats such as ArcGIS, MapInfo and GeoSoft.
- Combines different layers of data for mineral exploration.
- Project must have at least 30-40 drill holes/rock samples.
- Can do baseline work with 15 drill holes/rock samples (The more drill holes/rock samples the better).
- Included are the (x,y) coordinates of the multiple layers of geophysics, geochemistry, topography, satellite, geology, faults, spatial data, etc...
- By combining various data types, data utilization is optimized and prediction is maximized.
- You must put good information in / to get good information out (garbage in / garbage out!)



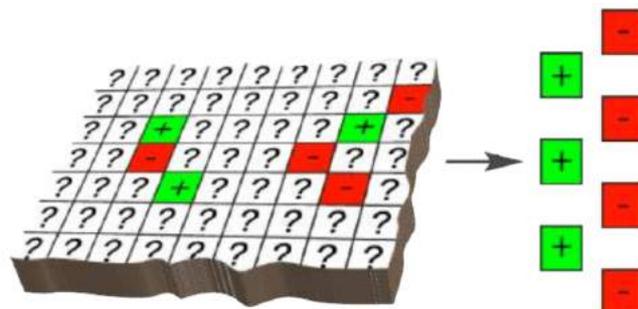
2. MODEL SET UP (local ore deposit signature learning)

Carried out by extracting the signature of each drill hole/rock sample – both positive and negative – (Drillhole/rock sample DNA):

- The +/- designation is given by the geologist working on the original property.
- Raw data is transformed into grid data.

DNA is built by sampling (cataloging) target +/- drill holes/rock samples and neighborhood drill holes/rock samples:

- The neighborhood size is calculated based on flight lines spacing's of any airborne geophysics survey data over area -i.e. -200 m flight lines means neighborhood size is ~ 1sO-17sm (centered around target drill hole/rock sample).
- This is so the system is only using the data from around each individual +/- drill hole/rock sample (not overlapping onto other flight lines).
- This system does not interpolate data (interpolation is done by geophysician).
- This system does not extrapolate or invent data.



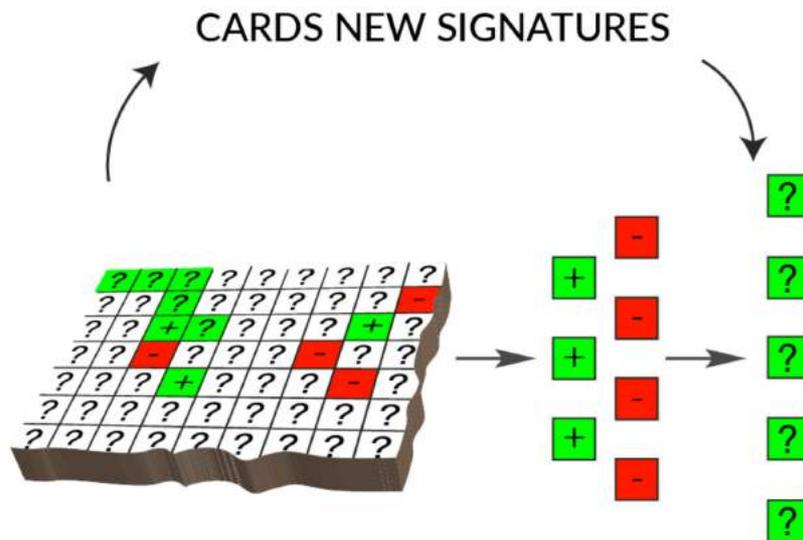
Millions of spatial data points and their relationships are analyzed.

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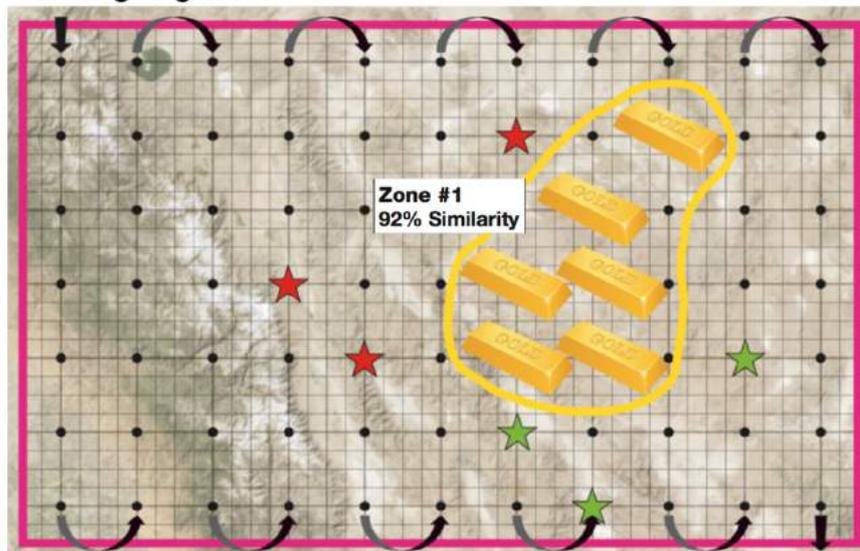
3. PREDICTION (DATA MINING)

Identification of high potential areas:

- Algorithms analyze each layer of information for every +/- drill holes/rock samples to create a new signature for the mineralization that is being sought (gold, copper, kimberlites etc.).
- Uses MCubiX data mining engine (with numerous different algorithms) to find patterns of information between +/- drill holes/rock samples.
- The system uses algorithms to find the new patterns – there is no human influence.
- Finds patterns invisible to the naked eye.
- System shows where the new mineralization signature will be in clients exploration area.
- Predictions are given a % cells rating: Targets over 80% are considered good and targets 90% and higher are best.
- Millions of spatial data points and their relationships are analyzed – in a rather short period of time – something that a human brain cannot do as ef efficiently and quickly as a computer.
- System is trained and “cross validated” on each model that CARDS generates.
- % cells feature “weeds” out unwanted (low %cells) targets and leaves only the highest probability areas to find mineralization, which in some examples is as low as 5% of total original project area.
- This system interprets data and generates models and predictions from that data interpretation.



Scoring Engine

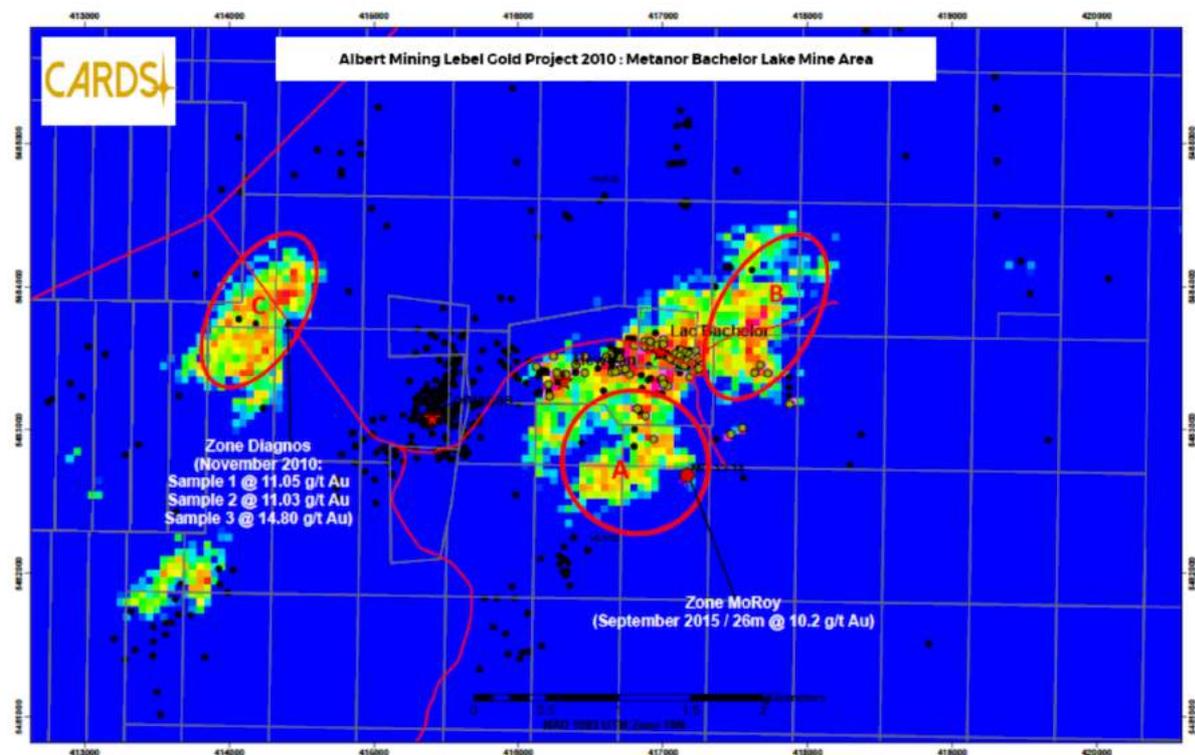


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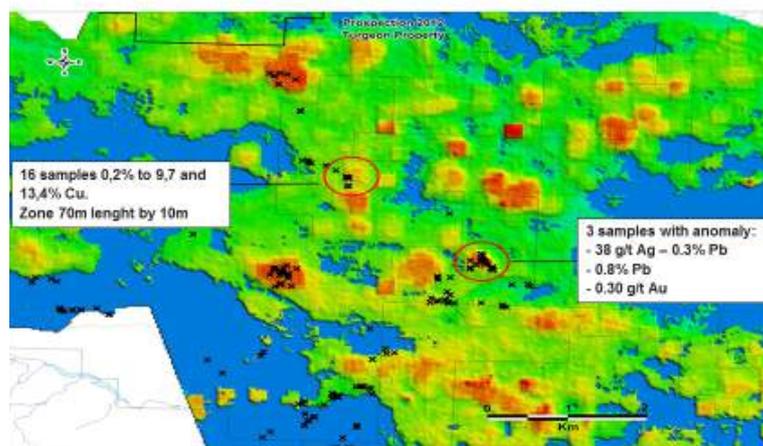
4. PRESENTATION

Map rendering of potential ore zones:

- This system is prone to find shallow mineralization (considering that most airborne surveys have shallow penetration).
- It can be very useful to find deeper mineralization but would have to be used in conjunction with a deep penetrating airborne survey.
- Useful to find buried mineralization (shallow or deep).
- CARDS target discoveries are: gold, copper, kimberlite (diamond), nickel, zinc, lead, uranium & molybdenum.
- Outputs can be easily integrated to different map formats such as ArcGIS, MapInfo and GeoSoft.



Puma Exploration, Canada - Feb 2013-
New Cu discovery(7-8 days)



POSITIVE RESULTS

PROOF OF VALIDITY OF CARDS

October 16, 2016

Eastmain announced a new discovery using CARDS

Ruby Hill West Prospecting

Prospecting completed by the Eastmain team on Ruby Hill West discovered a new surface gold showing located 2 km WSW of the historic EXKO showing (3.55 g/t Au; 17.0 g/t Ag; 0.12% Cu) discovered by the Eastmain Syndicate in 1989, and is believed to be a part of the same geological package.

The new discovery includes four values of 18.2 g/t Au, 1.68 g/t Au, 0.28 g/t Au and 0.18 g/t Au. Two other gold samples were found approximately 200 m ENE with grades of 3.71 g/t Au and 2.59 g/t Au. These grab samples are along strike of the new gold showing and indicate a potential lateral continuity of the new discovery, with EXKO.

The gold mineralization is associated with arsenopyrite and is hosted in a silicified mafic volcanic layer located immediately north of an ultramafic sequence. The mafic-ultramafic lithology trends east-northeast along the central axis of the Ruby Hill West property.

Also during the prospecting program, grab samples were taken from a spodumene-bearing pegmatite dyke exposed over 60 m by 25 m, located approximately 40 km WSW of the Eastmain Mine deposit. Four samples returned values ranging from 0.50% to 2.19% Lithium with very anomalous Tantalum, Cesium and Rubidium values. This spodumene bearing pegmatite, present in the western part of the Ruby Hill West claim block, is also located in contact with ultramafic rocks suggesting that the dyke may be emplaced along a major fault structure often associated with the presence of ultramafic sequences.

The 2016 Prospecting campaign was carried under the supervision of the Eastmain team, as a field phase of a CARDS (Computer Aided Resources Detection System) study completed earlier this year by Diagnos Inc. Field work by Diagnos was supplemented with additional prospecting by Eastmain geologists.

February 26, 2013

Puma exploration found impressive results on the Diagnos Mining Division CARDS copper-zinc targets located south of the Turgeon Cu-Zn deposit, New Brunswick

32 samples revealed interesting results in the majority of the surface targets generated by Diagnos Mining Division. Three (3) areas of interest were observed with a new discovery of copper for a total of 16 samples with values ranging from 0.2% to 6.9% Cu. For now, according to the extent of the results, the area is 50m long by 10m wide.

This new mineralized zone is composed of quartz veins with sulphides in a silicified gabbro:

- Area 1: 6.92% Cu, 3.76% Cu, 3.28% Cu, 2.87% Cu, 2.78% Cu, 1.86% Cu (6 samples)
- Area 2: 143 g/t Ag, 3.92% Pb and 1.39% Zn (1 sample)
- Area 3: 0.21 g/t Au, 0.65% Cu (1 sample)

September 13, 2011

Gold sample assays up to 20.1 g/t, on targets identified by DIAGNOS MINING DIVISION CARDS technology

Working in tandem with CRESO personnel, DIAGNOS MINING DIVISION geologists sampled quartz veins in shear zones at the Gibson property, located in the West Shining Tree district of Northeastern Ontario. From 112 locations, six of which returned assays above 1 g/t Au, including higher grade assays up to 20.1 g/t Au, 10.7 g/t Au, and 7.16 g/t Au.

August 9, 2011

Typhoon Exploration Inc. did a new discovery in an unexplored area using CARDS - 3D technology

Hole FAX-11-22, located in an unexplored area using CARDS-3D technology from Diagnos Mining Division, has generated several mineralized intersections between 211 and 253 meters, including one of 1.2 g/t Au over 1 meter, in a highly anomalous interval of 11 meters.

POSITIVE RESULTS

PROOF OF VALIDITY OF CARDS

November 2nd, 2010

Impressive results of gold in a new undiscovered zone at Bachelor/Hewfran

Metanor Resources ("METANOR") announced impressive results on the CARDS gold targets on a potential gold zone (Zone 3) commencing at surface situated 2.0 km from the Bachelor Lake Mill and the grab samples greater than 10 g/t were found only 2 to 10m from the road leading to the mill.

This new mineralized zone is composed of quartz veins in an East-West orientated shear zone. The best results obtained were as follows:

- Sample # 867355: 11.05 g/t Au
- Sample # 867356: 11.03 g/t Au
- Sample # 867359: 14.80 g/t Au

June 30, 2010

SPIDER and KWG discover a new kimberlite on a target identified by DIAGNOS MINING DIVISION'S CARDS

SPIDER and KWG announced the discovery of a new kimberlite using DIAGNOS MINING DIVISION'S CARDS system which was used to find and prioritize exploration targets.

A new kimberlite deposit was found at a depth between 35 and 111 metres and is now referred to as Kyle #6. It was hidden beneath 35 metres of Paleozoic carbonate cover rock including limestone and dolomite, located on the west side of the "Ring of Fire" exploration area. We are awaiting the laboratory's results.

February 29, 2008

DIAGNOS MINING DIVISION'S technology woke up the sleeping giant – Impressive results of copper in Haiti

DIAGNOS inc. was mandated in 2006 for the account of SGH, to target high probability zones for base metals and gold in Haiti. Following recognition work carried out by RSW-Béroma, the trench sampling shows the accuracy of the targets generated by DIAGNOS' CARDS system. The returns of the analysis of the samples taken on the site showed impressive copper values of:

- Sample 1: 7.46%
- Sample 2: 6.21%
- Sample 3: 9.51%
- Sample 4: 0.10%
- Sample 5: 6.69%

October 30, 2007

DIAGNOS MINING DIVISION'S targets return great results with 42.7 g/t of gold on 6 meters and significant nickel's anomalies on SGH S.A.'s Faille B property in Haiti

Within the framework of a program aiming to extend gold reserves of SGH's Faille B deposit, DIAGNOS MINING DIVISION has used helicopter-borne geophysical data (MAG, FDEM, radiometric) to develop a CARDS model for gold, copper and nickel's mineralization.

Soil samples, located in-line with the Faille B structure, have shown significant anomalies for gold:

- 508 ppb of gold on target C2
- 362 ppb of gold on target C3
- 308 ppb of gold on target C5

October 18, 2007

Noront Discovery: Double eagle discovery identified for KWG by 2005 DIAGNOS MINING DIVISION'S study

CARDS was used in 2005 in a study of the McFauld Lake area data on behalf of KWG Resources Inc. The study premised that a high priority target for base metal concentration was indicated at the precise coordinates of Noront's discovery, announced earlier in September of this year.

May 14, 2005

Juina Brazil, Diagem Corp.: 5 Kimberlites discovered using CARDS

A comprehensive analysis of DIAGEM's Juina Brazil Project by CARDS reduced the number of potential targets from 1000 to the 27 of the highest potential. Of those 27 targets, DIAGEM drilled 6 and 5 kimberlites were discovered!

OUR PARTNERS & CLIENTS



Contact us

For additional information on how CARDS can work for you, contact

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