

Global leader expands mining exploration business

TECHNOLOGY | SCIENTIFIC & TECHNICAL INSTRUMENTS



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Mining has become a *tough* business. It was never easy. However, with depressed commodity prices for many metals and capital markets which are still tight, mining companies have never had to be more budget-conscious. In particular, mining exploration has become extremely difficult.

The vast majority of the world's most lucrative mining opportunities have already been identified. This means that the junior exploration companies who find most of the world's commercial mineral deposits are having to look harder and longer for economically viable ore bodies.

As drilling costs skyrocket and quality ore deposits become harder and harder to find, mining exploration companies are utilizing ground and airborne geophysics to a greater degree than at any other time, enabling these

companies to *explore smarter* and discover deposits under cover with no surficial expression. Until now, however, even conducting magnetometer surveys to detect the presence of mineralized anomalies has been a relatively expensive proposition.

What is a problem for the mining industry is an opportunity for Pioneer Aerial Surveys Ltd., the 100%-owned subsidiary of **Alta Vista Ventures Ltd.** ([CSE: UAV. OTCQB: YRLLF. Forum](#)). Through the use of its fleet of Unmanned Aerial Vehicles, (UAV's), Pioneer Aerial is in the business of saving money for mining companies engaging in exploration. With the Company's state-of-the-art UAV-MAG™ survey system, Pioneer Aerial is able to provide resource companies with data which is equal-or-better-than other surveying methods, usually at a fraction of the cost.

Previously, mining companies have had two choices when it comes to magnetometer geophysical surveys: ground-based surveys or surveys conducted by conventional aircraft – either fixed-wing or helicopters. Ground-based work is slower, labour-intensive and geographically limited. Even before the development of UAV technology, ground-based surveying was typically only suitable for handling surveys over smaller areas. Pioneer Aerial can conduct the same work at typically *one-half to one-third of the cost* of a similar ground-based survey.

Conversely, using conventional aircraft has high costs associated with it because of the expense of operating the aircraft themselves. With higher operational costs, conventional aircraft were only a cost-effective option for surveying very large areas such as regional scale surveys. In contrast, with low mobilization costs and low costs per-line-kilometer, using drones for geophysics surveying is practical for property scale surveys, replacing ground based surveys and filling the gap between ground and conventional airborne surveys.





UAV-MAG™ is the best solution for 1-2000 km surveys

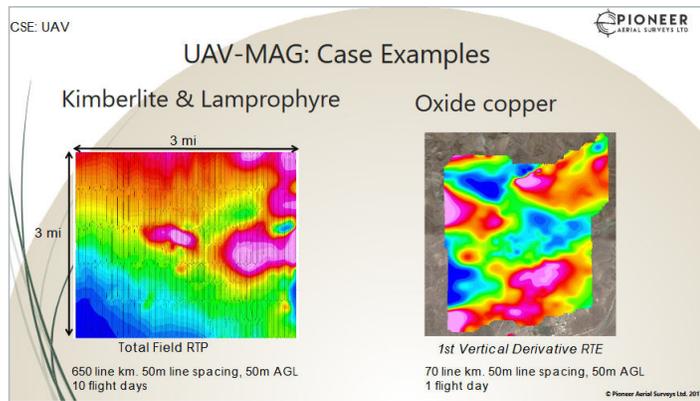
	Ground Mag	UAV-MAG™	Airborne Mag
Mobilization Cost	Mid	Low	High
Standby Cost	Low	Low	High
Weather Tolerance	Mid	High	Low
Operating Hours	Daylight	All hours	Daylight
Daily Production (line km)	10 – 13	Up to 140	1000+
Cost Per Line km	\$\$\$	\$	\$
Optimal Survey Size (line km)	1 – 100	1 – 2,000	2,000 +

Low Cost—High Safety—High Efficiency



This is only the starting point when it comes to the flexibility of using UAV technology to conduct airborne magnetometer surveys. Drones are particularly advantageous when doing image work over especially hilly or mountainous topography, a common necessity in the mining industry.

With their slower flying speed and reduced turning radius, drones can be safely and effectively operated – at a low cost – in virtually any geographical setting. Flying lower-and-slower also means that UAV-MAGTM surveys generally provide superior data versus surveys conducted by conventional aircraft because of the increased data density.



Aerial for the quality of data it provides as well as the reduction in safety hazards compared with aerial surveying using conventional aircraft.

Already, Pioneer Aerial has conducted surveys for Rio Tinto and De-Beers, marking the first ever UAV contract awarded by Rio Tinto in the Western Hemisphere. One reason this UAV company is attracting the attention of mining heavyweights is the significant safety margin increase the technology provides compared to conducting surveys with ground crews in difficult terrain. In addition, the UAV platform allows for innovative survey designs that would be too expensive to conduct otherwise, such as multi-elevation mag surveys.

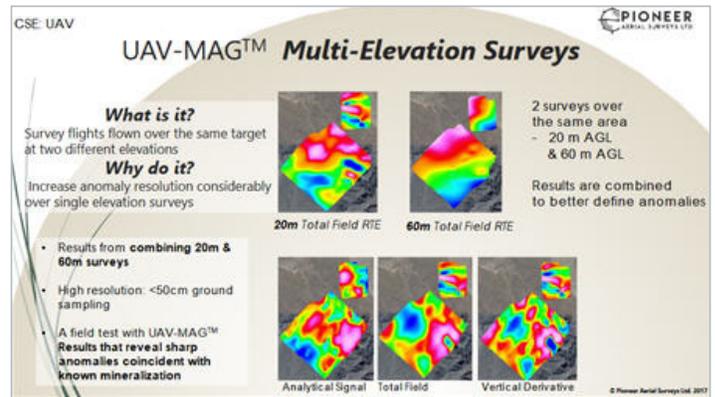
Pioneer Aerial's personal advantage is its expertise in surveying. What this means is that not only are mining companies now actively seeking out UAV businesses to conduct their magnetic resonance imaging, they are specifically knocking on Pioneer Aerial's door.

The Company is already a global leader in bringing this state-of-the-art technology to the mining industry. Pioneer Aerial has flown surveying assignments for mining operations throughout the US and Canada, and overseas. Indeed, in some cases UAV's are the only economical option for magnetic surveying.

When Pioneer Aerial was commissioned for surveying work in Oman, it was dealing with a geologically unique chromite deposit. The difficult terrain made it impossible to conduct a ground survey while an air survey would have been prohibitively expensive. A drone was able to perform the same work and produce top-quality data at a reasonable cost.

It's not just junior mining companies which are seeking to take advantage of Pioneer Aerial's cost-effective services and reputation for excellence. Even major mining companies are coming to the Company.

With global projects, these major mining companies are constantly searching for innovative technology that can make exploration safer, more cost effective and produce high quality data. They come to Pioneer



Because drones are capable of (safely) operating at lower altitudes than conventional aircraft and can do so at less expense, Pioneer Aerial can produce two surveys of the same region at different altitudes. Combining the results from different altitudes can better define these magnetic anomalies.

Pioneer Aerial's industry-leading expertise in conducting these UAV magnetic surveys is derived from the seasoned team of geologists who lead its operations. Michael Burns is the President of Pioneer Aerial. Burns is an experienced geologist and a founding member of Mack-

evoy Geosciences Ltd (2007 – 2013). He was a co-founder of Pioneer Exploration and has management and board room expertise with other companies.

Along with its UAV pilots, Pioneer Aerial also has full-time geologists and a geophysicist available to supervise these drone surveys and analyze the data obtained from imaging.

For parent company Alta Vista Ventures, its Pioneer Aerial subsidiary is just one of the Company's drone-based operations. Its corporate mission is to become a one-stop UAV services provider through acquiring diverse, established and profitable UAV companies as it seeks to be a consolidator in the sector.

PricewaterhouseCoopers (through one of its [subsidiaries](#)) estimates the total potential market for commercial drone applications at \$127 (USD) billion world-wide. PwC identifies mining, infrastructure, agriculture, transportation, security, media & entertainment, insurance, and telecommunications as all being potential multi-billion dollar commercial niches for the UAV industry.

In addition to industry-leader Pioneer Aerial, Alta Vista has a 100% interest in High Eye Aerial Imaging Inc. Like Pioneer Aerial, High Eye also produces high-definition aerial imaging services and [last month](#) it completed its largest project to date.

The key difference between the two entities is that High Eye provides *photographic* imaging versus the geophysics MAG surveying provided by Pioneer Aerial. To put it simply, High Eye produces surface imaging for its clients while Pioneer Aerial provides beneath-the-surface imaging.

This means that the same mining clientele which has already jumped on the bandwagon regarding Pioneer Aerial's UAV-MAG™ surveying are also potential clients of Alta Vista's other UAV subsidiary. The high-resolution photography and 3-D surface models from High Eye can be of great value to mining companies in their logistical planning, from road construction work to improve access to a particular property all the way up to mine construction itself.

Alta Vista is fully committed to expanding its UAV operations into other sub-sectors of the commercial market for drones. The surging demand for the Company's UAV-MAG™ services has been reaffirming the company's shareholders that the acquisitions to date were the right choices.

Alta Vista anticipates that revenue from Pioneer Aerial will soon hit the \$100,000/month threshold and it has had to expand its UAV fleet to meet this increased demand. With growing sales and strong margins, Pioneer Aerial is already becoming an important revenue stream for the Company.

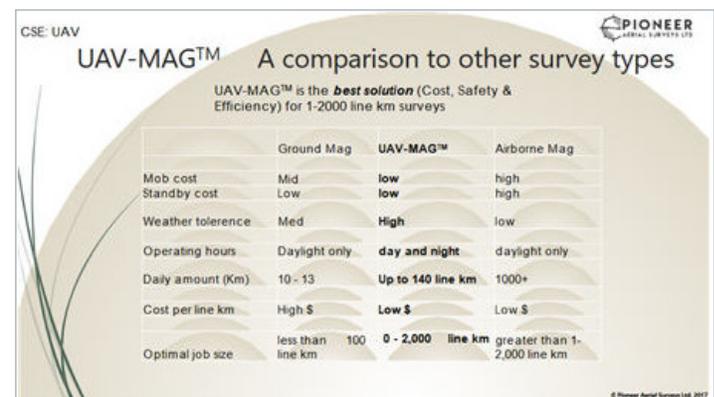
With Pioneer Aerial now established as an industry leader in UAV-based MAG surveying and with High Eye Aerial able to offer complementary imaging services to the mining industry and beyond, Alta Vista Ventures is uniquely positioned to dominate the mining sub-sector in the UAV space.

Not surprisingly, Pioneer Aerial recently concluded a strategic partnership with Abitibi Geophysics, an established, international geophysics company. Alta Vista's March 2, 2017 [news release](#) highlights the synergies of the deal.



Abitibi Geophysics is a premier geophysical company renowned internationally for its expertise in mineral exploration and in geophysics, with significant know-how in geophysical surveys including survey design, data acquisition, processing, modelling/inversion, and interpretation. Of importance to the newly formed strategic partnership, Abitibi is also developing leading edge lightweight sensors for electromagnetic exploration that could potentially be used with a UAV.

For mining companies, the new partnership provides greater value-added in the depth and sophistication of the UAV-MAG™ surveys provided by Pioneer Aerial. For Pioneer Aerial and Alta Vista itself, the strategic partnership solidifies the Company's position as an industry leader in UAV-based magnetometer surveys.



Alta Vista Ventures has a market cap of only \$4.5 million as it endeavours to be a consolidator in this emerging industry. With numerous multi-billion dollar sub-sectors as growth opportunities, the Company provides an exciting level of blue sky potential for investors seeking exposure to the UAV space.

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