Case Study

VOLANT
Mining

Situation

A 900-acre remote aggregate mine was looking for a way to optimize their resource management. Traditional methods were inadequate due to their inaccuracy in volumetric measurement. They were also highly risky due to the extremely steep terrain of the site, which had significant landslide risk. The combination of UAV mapping capabilities, intelligent cameras and IoT sensors offered numerous advantages:

> An Increase in Volumetric Measurement Accuracy
> Adherence to EnvironmentalRegulations
> Increased Safety for Personnel
> Increased Security of the perimeter
> Improved Tracking of Assets for Insurance Claims

Objectives

> Increase the Accuracy of Resource Measurement
> Decrease the Long-Term Costs Associated with Measurement
> Reduce the Risk Associated with Materials easurement
> Increase Safety, Security & Environmental Compliance

Plan

Step 1:
Provide a Comprehensive 900 Acre Map of the Mine

Step 2:
Provide Precise Volumetric Measurements for all Outdoor Stockpiles via Photogrammetry

Step 3:
Identify High-Risk Landslide Areas with Slope Modeling

Step 4:
Install IMUs in Landslide Areas to Monitor Movement (Pending)

Step 5:
Install IoT Water Sensors to Monitor Water Quality (Pending)

Step 6:
Install AI Cameras to Monitor Operations & Unauthorized Access (Pending)

Results

> Increase in Voulmetric Measurement Accuracy from 70% to 98%
> Increase of Approximately 10% in Operational Efficiency
> Increased Confidence in Personnel Safety
> Increased Confidence in Environmental Regulation Compliance